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ABSTRACT

This document contains both a final report and a curriculum guide for the Homestudy Option, a program geared to the 1988 General Educational Development (GED) test. The final report describes two program objectives: (1) providing an adult basic education home study curriculum to rural adults to take the first steps toward educational independence; and (2) reaching many rural students who find educational programs inaccessible. The following project activities are discussed: (1) development of a home study packet containing seven sections, one for each of five GED subjects plus orientation and test-taking units; testing of the packet with 23 students; and dissemination of the project through AdvancE in Pennsylvania. The curriculum guide includes the following sections: orientation; writing; social studies; science; literature and the arts; math; and GED test-taking tips. Each section may include the following: a message to the student; key words and phrases; general information; handouts; questions and answers; "think and write" activities; and examples. (NLA)

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The Homestudy Option

Final Report

by

Barbara Goss, Instructor

Carol Molek, Project Director
1990-1991

June 30, 1991

TIU Adult Education and Job Training Center
1020 Belle Vernon Avenue
Lewistown, PA 17044
(717) 248-4942

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Table of Contents

The Homestudy Option

Page

Abstract.......... 1

Introduction.......... 2

Statement of Problem.......... 4

Goals and Objectives.......... 5

Procedures.......... 6

Results.......... 7

Evaluation.......... 12

Dissemination.......... 12

Conclusions/Recommendations.......... 13

Bibliography.......... 14

Abstract

Title: The Homestudy Option

Address: TIU Adult Education and Job Training Center
1020 Belle Vernon Avenue
Lewistown, PA 17044

Phone No. (717) 248-4942
Federal Funding: $9,600
No. of Mos. 12

Director: Carol Molek
Duration of Project:
From: 7/1/90 **To:** 6/30/91

Objectives:

-To develop homestudy packet (7 sections: 1 for each 5 GED subjects plus orientation, and test taking units)

-To test packet with at least 12 students

-To document results of project in final report

-To disseminate project through AdvancE, PDE, our contacts and the TIU

Description:

"The Homestudy Option" was a homestudy program geared to the '88 GED test. The packets of the program addressed the problem areas that 2 years of working with the new test had identified. The materials were coordinated with existing commercially produced materials and a telephone/home visit contact system.

The goal of this project was to reach many of the students who found education programs inaccessible to them. By providing them with the opportunity of having consistent support we felt many of them would achieve much success in completing GED testing.

Target Audience:

Rural students with a GED diploma as their goal who are performing at the upper ABE or GED level. The program is also adaptable for other rural adult education programs.

Products:

Homestudy packets (7 sections) and instructors' guide
Final report

Method of Evaluation:

-The completion of the 7 packet homestudy program

-The use of the program by at least 12 participants

-The success of at least 10 of the students to pass the GED test or to still be actively working in the homestudy program by the end of the project year

Introduction

"The Homestudy Option" addressed state priority I.E.: Development of an effective distance education delivery system.

In dealing with our students in rural Mifflin and Juniata Counties, we found that many were not able to overcome the transportation and childcare barriers to attend classes. Although some progress to overcome these barriers had been made, we knew there would always be potential students who could not attend classes for any number of reasons. We had numerous requests from people for homestudy materials. However, we were only able to provide them with textbooks and some basic instructions. This project enabled us to meet the needs of a substantial number of ABE students locally and through dissemination across the state.

Addressing the barriers of our rural students became a definite priority. With national literacy publicity gaining more and more attention, we saw the importance of reaching our most difficult to reach students who were often ignored. The literacy message had touched many who were anxious to take the first step. We realized that we had a responsibility to fulfill the promise of literacy services to our area's adults even if they could not conveniently attend our scheduled classes. Our "Homestudy Option" provided an equal educational opportunity for all our students.

Homestudy programs for GED had been developed before.

However, what we proposed here was a unique program specifically geared to the '88 GED Test. After two years of successful classroom instruction for the '88 test, we were competently prepared to identify the important skill areas and to design a homestudy plan to directly address these skills.

We proposed to coordinate the homestudy program with existing commercially produced materials, a telephone contact system, and home visits. One of the most important key elements of the program's success was the firm linkage established between the homestudy student and our learning center.

Time frame for "The Homestudy Option" was as follows:

July, August '90 - Analysis of GED test for problem areas by staff, students, alumni

September '90 - December '90 - Development of the curricula

January '91 - June '91 - Program usage

June '91 - Final report and dissemination

Staff contributing to this project were Carol Molek, Project Director. Ms. Molek has over 7 years experience coordinating adult programs for the IU and developing curriculum; Barbara Goss, ABE instructor, who developed and implemented the homestudy curriculum. Ms. Molek and Ms. Goss previously jointly developed 310 projects of curriculum development: "The Writing Wheel" and "Ready-Set-ABE."

The audience this project addresses is those individuals performing at the upper ABE or GED level who cannot attend a learning center. This report is directed towards adult education administrators, instructors, and counselors. It is hoped that the information and materials will serve as a model for adult educators statewide to incorporate a homestudy component into their own ABE/GED program.

Permanent copies of this report can be obtained from:

Pennsylvania Department of Education
333 Market Street
Harrisburg, PA 17126-0333

and

AdvancE
Pennsylvania Department of Education
333 Market Street
Harrisburg, PA 17126-0333

Specific inquiries may be made to:

Carol Molek
TIU Adult Education and Job Training Center
1020 Belle Vernon Avenue
Lewistown, PA 17044
717-248-4942

Problem Statement:

"The Homestudy Option" developed out of a strong need and desire to offer quality educational services to those students who live in a rural area and who found attending classes at a learning center next to impossible. Generally the barriers were lack of childcare or transportation or numerous other situations that prevented attending classes. We wanted to develop a "self-teaching" curriculum that would afford this segment of our rural population an opportunity to begin their education. We wanted these persons to achieve academic success. We wanted to provide these students with a way to positively respond to the literacy messages and take that first step toward a more fulfilled life.

We were also looking for a way to establish a firm, permanent connection between the homestudy student and our learning center. We incorporated into this program a telephone contact system and home visits in an attempt to make that link stronger and provide additional education services for our homestudy students.

The development of this program - a complete, self-teaching curriculum, phone contacts, and home visits - permitted us to meet the homestudy problem head-on and to give our homestudy students an opportunity to take that first step toward a better life.

Goals and Objectives

Goals for the "Homestudy Option" were to:

1) provide adult basic education homestudy curriculum to rural adults so that their ambitions to take the first step towards educational independence are not thwarted

2) provide services to students who are hard to reach and who previously felt excluded from possibilities of advancement

Objectives of the project were:

-to develop a homestudy packet (containing seven sections: one for each of the GED tests, one for orientation and one on test taking skills)

-to test the packet with at least 12 homestudy students

-to document results of the project in a final product

-to disseminate homestudy project through AdvancE

Procedures Employed:

The design for "The Homestudy Option" involved a 4 stage plan:

Stage one of the project consisted of analyzing each GED subject area, specifically looking at those areas where students consistently needed instruction beyond textbooks. With input from instructors, students, and alumni, particular problem areas were identified and addressed.

Stage two developed the curriculum around these identified problem areas. Also developed in this stage were two additional resource packets: an orientation packet that contains basic instructions using the materials in each academic area and a complete time schedule for completing the reading and the exercises; and a test taking packet that consists of information and material to help the homestudy student thoroughly prepare for the GED test taking experience. Some materials in the test taking packet are specifically designed for the GED test. Other information on test taking is general and will provide the student with test taking skills for any test situation.

Stage three utilized the program with at least 12 students. Assessment of these students was conducted individually with a variety of instruments. Only students at the high ABE or GED level were enrolled in this program. Those students whose skills needed more basic improvement were advised to enter our tutorial program.

Stage four included the writing of the final report and dissemination of the final report and final products.

Results:

Objective #1 - to develop a homestudy packet (containing seven sections: one for each of the GED tests, one for orientation, and one on test taking skills.)

This objective was effectively and successfully met. The sections for each one of the reading tests - Social Studies, Science, and Literature - contain a variety of material that focuses on critical reading and thinking skills. These three reading sections also emphasize writing in the content areas. Incorporated throughout the reading exercises are highlighted portions titled "Think and Write." This not only encourages the student to experience the critical thinking process but also encourages the student to participate in writing beyond journal-type writing. All the skills taught in the reading materials are extremely transferable to other areas of the test, especially the writing. Once the student has completed the recommended exercises and reading sections in the textbooks, he/she should be thoroughly prepared to completely test in the 3 reading areas.

The writing section focuses on writing exercises and pronouns. Our classroom instruction has shown that these 2 areas demand extra attention, practice, and study. Within this writing section is a packet of materials that will not only improve writing skills but will also improve critical thinking skills. We have been successfully using this writing material in class for approximately one year. Because the exercises employ both writing skills and critical thinking skills, we have found that our students are more comfortable and confident when they write for the GED test, and we have seen our writing scores rise dramatically. Our homestudy students should be able to reap the same benefits.

The math section focuses on fractions, decimals, and percents with plenty of practice exercises in all 3 areas. Based on the knowledge that a strong foundation in fractions, decimals, and percents provides a greater chance for success in algebra and geometry, we provided the homestudy student with every opportunity to gain that success. There is also an ample supply of word problems to improve our students' skills in this area of math. All the math material is highly self-teaching. The material provides lots of examples and step-by-step instructions. Our homestudy students are given everything they need to work competently and skillfully through all areas of math.

The orientation section provides the student with a complete study guide. Beginning with the Pre-GED level and moving on to and through the GED level, students are guided through a weekly lesson plan. The reading from the textbooks plus additional reading and exercises from the individual packets are incorporated into a weekly schedule of study. This was done to give our homestudy student a very structured study schedule. It is often too easy for a homestudy student to become disorganized and scattered in his/her studying. The study schedule not only helps general organization but also provides a specific time frame for completion. Granted, some students will take longer and some will work through the lessons more quickly, but the study schedule does provide a logical progression through the material with a time frame for completing the work. Also included in the orientation packet is an introduction to the three reading sections. Reading material that lays a foundation for the reading and exercises in the Social Studies, Science, and literature packets are emphasized in this packet. By working with these materials first, the student is assured of greater knowledge and success with the individual reading areas. The orientation information serves as a concrete beginning to insure completion and success.

The test taking section provides information for successfully dealing with the pressures and "unknowns" of the GED test. Once the student has completed all the reading and all the exercises, the major concern becomes handling the situation of the actual GED test. The test taking tips include some information geared specifically to the GED test. Other information concentrates on more general test taking tips that can be applied to the GED test or to any other testing the student may enter into in the future. Our goal was to provide test taking information that was accurate, assuring, and encouraging so that the student would be able to take the GED test with much confidence. We successfully met that goal and the goal set forth for the entire homestudy curriculum - to provide an adult basic education homestudy curriculum to rural adults to allow them to take the first step towards educational independence.

Objective #2 - To test the packet with at least 12 homestudy students.

The homestudy materials were provided to and or made available to all our homestudy students. Over the year we had 23 homestudy students. As an outcome of their study and preparation for the GED test, we received some very positive, encouraging results: 4 of our homestudy students completed testing and were issued their GED diplomas; 1 of our homestudy students began testing and successfully completed 2 areas of the GED test; 8 of our homestudy students have expressed a readiness and a desire to take their GED in September, 1991; 10 of our homestudy students have chosen to remain on homestudy for an extended period of time. Our purpose was to provide services to hard to reach students and to provide them with 7 homestudy packets to assist them in preparing for the GED and beyond that, educational and life independence. Based on the fact that over half (13 students) of our homestudy students have either completed testing, began testing, or plan to test within 3 months, our success with this homestudy curriculum is evident. For those students continuing on homestudy, they have all made sufficient progress and will test in the near future. Our purpose and our goal was firmly established and successfully accomplished.

Objective #3 - To document the results of this project in a final report.

This final report completely and thoroughly documents the results of "The Homestudy Option."

Objective #4 - To disseminate the homestudy project through AdvancE.

This objective was successfully met. In the introduction section of this final product, complete information was provided for obtaining permanent copies of this project. This includes both the final report and copies of the homestudy curriculum.

Evaluation:

Evaluation of "The Homestudy Option" was based on measurement of the success of the following:

-the development of a seven section homestudy packet

-the use of the packet by at least 12 homestudy students

-the success of 10 of the students to pass the GED test or still be consistently working in the homestudy program by the end of the year.

This project was highly successful. We met all of our goals and objectives by providing services to our hard to reach students and by providing them with a homestudy curriculum that enabled them to begin their educational independence.

Dissemination

"The Homestudy Option" will be available for dissemination through:

Pennsylvania Department of Education
333 Market Street
Harrisburg, PA 17126-0333

and

AdvancE
Pennsylvania Department of Education
333 Market Street
Harrisburg, PA 17126-0333

Specific inquires can be made to:

Carol Molek
TIU Adult Education and Job Training Center
1020 Belle Vernon avenue
Lewistown, PA 17044
717-248-4942

Conclusions/Recommendations

"The Homestudy Option" provided a greatly needed expansion of homestudy curriculum and of homestudy programs. By providing a comprehensive homestudy curriculum, we permitted our students to have quality materials and a structured study guide to direct them in a positive course of action. Homestudy programs had been developed before, but not specifically geared to the '88 GED test and not as comprehensive as "The Homestudy Option." Through "The Homestudy Option" we have developed a transferable curriculum that can be well utilized statewide.

Our recommendations for our future homestudy students and for others are to continue using "The Homestudy Option" as a means of ensuring successful homestudy. For rural adults who desire educational services but who are often difficult to reach, "The Homestudy Option" offers the perfect way to move educationally forward. We would highly recommend to other adult centers implementation of "The Homestudy Option" into their own curriculums for their homestudy students. We hope our experiences and our homestudy curriculum will serve as a model for others.

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The Homestudy Option

Curriculum

Barbara Goss, Instructor

Carol Molek, Project Director
1990-1991

June 30, 1991

TIU Adult Education and Job Training Center
1020 Belle Vernon Avenue
Lewistown, PA 17044
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98-1023 - $9,600

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ORIENTATION

ORIENTATION

To The Student,

Congratulations! You have made an important decision to study for your GED. We would like to take this opportunity to welcome you to our program. We sincerely hope that the materials provided in each of the homestudy packets will enhance your understanding of the areas tested on the GED. It is also our intention to provide you with enough additional reading and exercises that you will be confident and self-assured when you take the GED test. We wish you all the best in your preparation for an important new beginning in your life.

This orientation packet is designed to acquaint you with some basic information about the GED and to get you started on some basic reading exercises. Included in this orientation packet is the following information:

1. GED test chart
2. A complete outline of the chapters in the textbooks for the 5 subject areas of the GED test
3. A complete week-by-week schedule of reading and exercises for the 5 areas of the GED test
4. Time management information
5. Basic reading and critical skills exercises

We recommend to you and encourage you to begin your orientation with the time management. Remember, you are on your own! You are going to need to make a special commitment to setting up your own study schedule and working independently. That's not always an easy task. We have used the time management material that we are providing for you with our students in class. We have had a great deal of positive feedback, so we know this will work for you.

Once you have reviewed the time management material, we recommend that you take the time to thoroughly examine and study the outline of the textbook chapters and the week-by-week schedules of reading and exercises. You need to know how to proceed - your "plan of action." You should begin that plan by working through the study schedule at the Pre-GED level. By doing the reading and the exercises in these textbooks first, you will thoroughly prepare yourself to move on the GED level. The Pre-GED materials give you all the basics as well as giving you the perfect opportunity to become reacquainted with the 5 specific academic areas on the GED test: Writing, Social Studies, Science, Literature and the Arts, and Math. Once you have completed the Pre-GED study schedule, you are ready to move to the GED study schedule. You will note that at the end of the Pre-GED study schedule, you are instructed to proceed to the next level and set of instructions. The GED study schedule will provide for you an expansion of the basic material you read and studied at the Pre-GED level. The GED reading and the exercises address a higher level of critical thinking skills. Also, you will have ample opportunity at this level to deal consistently with reading passages and questions that are similar to the reading passages and questions on the actual GED test. When you completely finish the GED study schedule, you will be ready to practice test.

Finally, after reviewing the study schedules, you should do all the reading and critical thinking skills reading passages and exercises in this orientation packet. Those reading passages and exercises are preparatory for the social studies, science, and literature and the arts reading units.

Good Luck!

GED Tests

TEST	%	# Items	Time Limit
WRITING SKILLS, Test 1, Part 1			
Sentence Structure	35	55	75
Usage	35		
Mechanics (capitalization, punctuation, and spelling)	30		
Sentence Correction	50		
Sentence Revision	35		
Construction Shift	15		
WRITING SKILLS, Test 1, Part 2			
Essay			45
SOCIAL STUDIES, Test 2			
History	25	64	85
Economics	20		
Political Science	20		
Geography	15		
Behavioral Sciences	20		
Cognitive Levels			
Comprehension	20		
Application	30		
Analysis	30		
Evaluation	20		
SCIENCE, Test 3			
Life Sciences	50	66	95
Physical Sciences (Earth Science, Physics, Chemistry)	50		
Cognitive Levels			
Comprehension	20		
Application	30		
Analysis	30		
Evaluation	20		
INTERPRETING LITERATURE AND THE ARTS, Test 4			
Popular Literature	50	45	65
Classical Literature	25		
Commentary about Literature and the Arts	25		
Cognitive Levels			
Comprehension: Literal and Inferential	60		
Application	15		
Analysis	25		
MATHEMATICS, Test 5			
Arithmetic			
Measurement	30	56	90
Number Relationships	10		
Data Analysis	10		
Algebra	30		
Geometry	20		
Cognitive Levels			
Set-up or Solution required	25/75		
Graphic or non-graphic stimulus	33/67		
Sufficient, extraneous, insufficient, or insufficient and extraneous	85/5/5/5		
Operations (addition, subtraction, multiplication, division, square root/exponents)	25/25/40/10		

Textbooks

Pre-GED Level

1. Contemporary's Pre-GED Writing and Language Skills
2. Contemporary's Pre-GED Social Studies Skills
3. Contemporary's Pre-GED Science Skills
4. Contemporary's Pre-GED Critical Reading Skills
5. Contemporary's Pre-GED Mathematics and Problem-Solving Skills Book 2

GED Level

1. Contemporary's GED Writing Skills
2. Contemporary's GED Social Studies
3. Contemporary's GED Science
4. Contemporary's GED Literature and the Arts
5. Contemporary's GED Mathematics
6. Contemporary's GED Mathematics Exercise Book

Contemporary Pre-GED Writing and Language Skills	**Contemporary GED Writing Skills**

Writing and Language Skills

PRE-GED	**GED**
1. Pre-test (includes Pretest Evaluation Chart and Pretest Answer Key) Pgs. 1-9	1. Introducing the Writing Skills Test Pgs. v-xii
2. Chapter 1 Parts of Speech Pgs. 10-23	2. Writing Skills Pretest, Part I and Writing Skills Pretest, Part II (includes Evaluation Chart and Pretest Answer Key) Pgs. 1-17
3. Chapter 2 What is a Sentence Pgs. 24-43	3. Chapter 1 Preparing for the Writing Sample/The Multiple Choice Section Pgs. 18-25
4. Chapter 3 Nouns and Pronouns Pgs. 45-68	4. Chapter 2 Planning your Writing/ Sentence Basics Pgs. 26-62
5. Chapter 4 Verbs: Form and Tense Pgs. 70-95	5. Chapter 3 Writing Paragraphs/ Using Verbs Pgs. 63-112
6. Chapter 5 Subject-Verb Agreement Pgs. 98-118	6. Chapter 4 Patterns of Organization/Combining Ideas in Sentences Pgs. 64-167
7. Chapter 6 Adjectives and Adverbs Pgs. 119-141	7. Chapter 5 Writing an Essay/ Modifiers, Parallel Structure, Pronoun Reference Pgs. 168-217
8. Chapter 7 Combining Sentences Pgs. 143-165	8. Chapter 6 Polishing Your Writing/Capitalization and Spelling Pgs. 218-271
9. Chapter 8 New Topics in Sentence Structure Pgs. 166-189	9. Chapter 7 Test Taking Strategies Pgs. 272-286
10. Writing Skills Post test (includes Post Test Evaluation Charts and Post Test Answer Key) Pgs. 191-199	10. Writing Skills Post test, Part I and Writing Skills Post test, Part II (includes Post Test Evaluation Chart and Post Test Answer Key) Pgs. 287-306

Contemporary Pre-GED Social Studies Skills

Contemporary GED Social Studies

Social Studies

PRE-GED	GED
1. Pretest (includes Pretest Evaluation Chart and Pretest Answer Key) Pgs. 1-15	1. Introducing the Social Studies Test Pgs. 1-9
2. Chapter 1 a) Understanding What You Read Pgs. 17-41 b) Chapter 1 Review Pgs. 42-45	2. Social Studies Pretest (includes Pretest Evaluation Chart and Pretest Answer Key) Pgs. 10-22
3. Chapter 2 a) Charts, Graphs, and Maps Pgs. 46-76 b) Chapter 2 Review Pgs. 77-85	3. Chapter 1 Comprehending Social Studies Materials Pgs. 23-36
4. Chapter 3 a) Patterns in Social Studies Reading Pgs. 86-108	4. Chapter 2 Applying Social Studies Materials Pgs. 37-67
5. Chapter 4 a) Analyzing Social Studies Passages Pgs. 113-136 b) Chapter 4 Review Pgs. 137-141	5. Chapter 3 Applying Social Studies Concepts Pgs. 68-81
6. Chapter 5 a) Evaluating Social Studies Materials Pgs. 142-163 b) Chapter 5 Review Pgs. 164-169	6. Chapter 4 Evaluating Social Studies Materials Pgs. 82-98
7. Chapter 6 a) Applying Information in Social Studies Pgs. 170-179 b) Chapter 6 Review Pgs. 180-183	7. Chapter 5 U.S. History Pgs. 99-146

Social Studies (continued)

PRE-GED	**GED**
8. Social Studies Post Test (includes Post Test Evaluation Chart and Post Test Answer Key) Pgs. 184-197	8. Chapter 6 Political Science Pgs. 147-175
	9. Chapter 7 Behavorial Sciences Pgs. 176-209
	10. Chapter 8 Geography Pgs. 210-240
	11. Chapter 9 Economics Pgs. 241-263
	12. Social Studies Post Test (includes Post Test Evaluation Chart and Post Test Answer Key) Pgs. 264-284

Science

Contemporary Pre-GED Science Skills	Contemporary GED Science
Pre-GED	**GED**
1. Pretest (includes Pretest Evaluation Chart and Pretest Answer Key) Pgs. 1-13	1. Introducing the Science Test Pgs. v-xii
2. Chapter 1 The Scientific Method Pgs. 14-27	2. Science Pretest (includes Evaluation Chart and Pretest Answer Key) Pgs. 1-12
3. Chapter 2 a) Understanding What You Read Pgs. 28-36 b) Science Topic: Plants and Animals Pgs. 37-52 c) Chapter 2 Review Pgs. 53-56	3. Chapter 1 Comprehending Science Materials Pgs. 15-30
4. Chapter 3 a) Understanding Illustrations Pgs. 57-72 b) Science Topic: The Human Body Pgs. 72-90 c) Chapter 3 Review Pgs. 91-95	4. Chapter 2 Applying Science Concepts Pgs. 31-41
5. Chapter 4 a) Analyzing Ideas Pgs. 96-106 b) Science Topic: Everyday Physics Pgs. 107-122 c) Chapter 4 Review Pgs. 123-128	5. Chapter 3 Analyzing Science Materials Pgs. 42-67
6. Chapter 5 a) Building Vocabulary Pgs. 129-137 b) Science Topic: Chemistry Pgs. 137-154 c) Chapter 5 Review Pgs. 155-159	6. Chapter 4 Evaluating Science Materials Pgs. 68-91

Science (continued)

PRE-GED

7. Chapter 6
a) Evaluating Ideas
Pgs. 160-166
b) Science Topic: Earth Science
Pgs. 166-187
c) Chapter 6 Review
Pgs. 188-193

8. Science Post Test (includes Post Test Evaluation Charts and Post Test Answer Key)
Pgs. 195-213

GED

7. Chapter 5 Plant and Animal Biology
Pgs. 92-121

8. Chapter 6 Human Biology
Pgs. 122-151

9. Chapter 7 Earth Science
Pgs. 152-183

10. Chapter 8 Chemistry
Pgs. 184-220

11. Chapter 9 Physics
Pgs. 221-257

12. Science Post Test (includes Post Test Evaluation Chart and Post Test Answer Key)
Pgs. 159-286

Contemporary Pre-GED Critical Reading Skills

Contemporary GED Literature and the Arts

Literature
Critical Reading Skills

PRE-GED

1. Pretest (includes Pretest Evaluation Chart and Pretest Answer Key)
Pgs. 1-13

2. Chapter 1
Undertanding What You Read
Pgs. 15-57

3. Chatper 2
Organization of Ideas
Pgs. 58-94

4. Chapter 3
Finding Hidden Meanings
Pgs. 95-127

5. Chapter 4
Reading Literature
Pgs. 128-172

6. Chapter 5
Thinking for Yourself
Pgs. 173-210

7. Reading Post Test (includes Post Test Evaluation Chart and Post Test Answer Key)

GED

1. Introducing Literature and the Arts Test
Pgs. ix-xvi

2.. Literature and the Arts Pretest (includes Pretest Evaluation Chart and Pretest Answer Key)
Pgs. 1-8

3. Chapter 1
Literal Understanding
Pgs. 9-30

4. Chapter 2
Inferential Understanding
Pgs. 31-54

5. Chapter 3
Analyzing Style and Structure
Pgs. 55-84

6. Chapter 4
Nonfiction Prose
Pgs. 85-109

7. Chapter 5
Prose Fiction
Pgs. 110-156

8. Chapter 6
Poetry
Pgs. 157-187

Literature (continued)

GED

9. Chapter 7 Drama
Pgs. 188-220

10. Chapter 8
Commentaries on the Arts
Pgs. 221-254

11. Literature and the Arts Post Test
(includes Post Test Evaluation Chart
and Post Test Answer Key)
Pgs. 255-269

Contemporary Pre-GED Mathematics and Problem-Solving Book2

Contemporary GED Mathematics

Mathematics and Problem-Solving Skills

PRE-GED

1. Chapter 1 Word Problem Skills/ Problem Solving
Pgs. 2-29

2. Chapter 2 Becoming Familiar With Numbers Smaller than 1
Pgs. 30-33

3. Chapter 3 Decimal Skills
Pgs. 34-65

4. Chapter 4 Common Fraction Fraction Skills
Pgs. 66-113

5. Chapter 5 Percent Skills
Pgs. 114-141

6. Chapter 6 Special Topics in Math
Pgs. 142-177

7. Math Post Test (includes Post Test Evaluation Chart and Post Test Answer Key)
Pgs. 178-183, 203

GED

1. Introducing the Mathematics Test
Pgs. vii-xiv

2. Mathematics Pretest (includes Pretest Evaluation Chart and Pretest Answer Key)
Pgs. 1-9

3. Chapter 1 Whole Number Review
Pgs. 1-18

4. Chapter 2 Problem Solving and Special Topics
Pgs. 19-46

5. Chapter 3 Introducing Numbers Smaller than 1
Pgs. 47-49

6. Chapter 4 Decimals
Pgs. 50-75

7. Chapter 5 Fractions
Pgs. 76-114

8. Chapter 6 Probability, Ratio, and Proportion
Pgs. 115-127

9. Chapter 7 Percents
Pgs. 128-157

10. Chapter 8 Measurement
Pgs. 158-179

11. Chapter 9 Graphs and Tables
Pgs. 180-201

Mathematics and Problem Solving Skills (continued)

GED

12. The Basics of Algebra
Pgs. 202-223

13. Chapter 11 Geometry
Pgs. 224-275

14. Chapter 12 Special Topics in Algebra and Geometry
Pgs. 276-308

15. Mathematics Post Test (includes Post Test Evaluation Chart and Post Test Answer Key)
Pgs. 311-321

PRE-GED

	Writing	Social Studies	Science	Literature and the Arts	Mathematics
Week 1	Writing Pre-test Pgs. 1-9	Social Studies Pre-test Pgs. 1-15	Science Pre-test Pgs. 1-13	Literature Pre-test Pgs. 1-13	Chapter 1 Word Problem Skills/Problem Solving Pgs. 2-29
Week 2	Chapter 1 Parts of Speech Pgs. 10-23	Chapter 1 a) Understanding what you read b) Chapter Review	Chapter 1 The Scientific Method Pgs. 14-27	Chapter 1 Understanding What you read Pgs. 15-57	Chapter 2 Becoming Familiar with Numbers Smaller than 1 Pgs. 30-33
Week 3	Chapter 2 What is a sentence? Pgs. 24-43	Chapter 2 a) Charts, Graphs, and Maps Pgs. 46-76 b) Chapter Review Pgs. 77-85	Chapter 2 a) Understanding what you read Pgs. 28-36 b) Plants and Animals Pgs. 37-52	Chapter 2 Organiza- of Ideas Pgs. 58-94	Chapter 3 Decimal Skills Pgs. 34-65
Week 4	Chapter 3 Nouns and Pronouns Pgs. 45-68	Chapter 3 a) Patterns in Social Studies reading Pgs. 86-108 b) Chapter review Pgs. 109-112	c) Chapter Review Pgs. 53-56 Chapter 3 a) Understanding Illustrations Pgs. 57-72 b) The Human Body Pgs. 72-90 c) Chapter Review Pgs. 91-95	Chapter 3 Finding Hidden Meaning Pgs. 95-127	Chapter 4 Common Fraction Skills Pgs. 66-113

	Writing	**Social Studies**	**Science**	**Literature and the Arts**	**Mathematics**
Week 5	Chapter 4 Verbs: Forms and Tense Pgs. 70-95	Chapter 4 a) Analyzing Social Studies Passages Pgs. 113-136 b) Chapter Review Pgs. 137-141	Chapter 4 a) Analyzing Ideas Pgs. 96-106 b) Everyday Physics Pgs. 107-122 c) Chapter Review Pgs. 123-128	Chapter 4 Reading Literature Pgs. 128-172	Chapter 5 Percent Skills Pgs. 114-141
Week 6	Chapter 5 Subject-Verb Agreement Pgs. 98-118	Chapter 5 a) Evaluating Social Studies materials Pgs. 142-163 b) Chapter Review Pgs. 164-169	Chapter 5 a) Building Vocabulary Pgs. 129-137 b) Chemistry Pgs.137-154 c) Chapter Review Pgs. 155-159	Chapter 5 Thinking for Yourself Pgs. 173-210	Chapter 6 Special Topics in Math Pgs. 142-177
Week 7	Chapter 6 Adjectives and Adverbs Pgs. 119-141	Chapter 6 a) Applying information in Social Studies Pgs. 170-179 b) Chapter Review Pgs. 180-183	Chapter 6 a) Evaluat- Ideas Pgs. 160-166 b) Earth Science Pgs. 166-187 c) Chapter Review Pgs. 188-193	Reading Posttest Pgs. 211-223	Math Posttest Pgs. 178-183, 203
Week 8	Chapter 7 Combining Sentences Pgs. 143 165	Social Studies Posttest Pgs. 184-197	Science Posttest Pgs. 195-213	Proceed to next level and set of instructions	Proceed to next level and set of instructions

	Writing	Social Studies	Science	Literature and the Arts	Mathematics
Week 9	Chapter 8 New Topics in Sentence Structure Pgs. 166-189	Proceed to next level and set of instructions	Proceed to next level and set of instructions		
Week 10	Writing Skills Posttest Pgs. 191-199				
Week 11	Proceed to next level and set of instructions				

GED

	Writing	Social Studies	Science	Literature and the Arts	Mathematics
Week 1	Reading-Introduction Pgs. V-XII Writing Skills Pre-test Pgs. 1-17	Reading-Introduction Pgs. 1-9 Social Studies Pre-test Pgs. 10-22	Reading-Introduction Pgs. V-XII Science Pre-test Pgs. 1-12	Reading-Introduction Pgs. IX-XVI Literature and the Arts Pre-test	Reading-Introduction Pgs. VII-XIV Mathematics Pre-test Pgs. 1-9
Week 2	Chapter 1 Preparing for the Writing Sample/ The Multiple Choice Section Pgs. 18-25	Chapter 1 Comprehending Social Studies Materials Pgs. 23-36	Chapter 1 Comprehending Science Materials Pgs. 15-30	Chapter 1 Literal Understanding Pgs. 9-30	Chapter 1 Whole Number Review Pgs, 1-18
Week 3	Chapter 2 Planning your Writing/ Sentence Basics Pgs. 22-62	Chapter 2 Analyzing Social Studies Materials Pgs. 37-67	Chapter 2 Applying Science Concepts Pgs. 31-41	Chapter 2 Inferential Understanding Pgs. 31-54	Chapter 2 Problem Solving and Special Topics Pgs. 19-46
Week 4	Chapter 3 Writing Paragraphs/ Using Verbs Pgs. 63-112	Chapter 3 Applying Social Studies Concepts Pgs. 68-81	Chapter 3 Analyzing Science Materials Pgs. 42-67	Chapter 3 Analyzing Style and Structure Pgs. 55-84	Chapter 3 Introducing Numbers Smaller than 1 Pgs. 47-49

	Writing	**Social Studies**	**Science**	**Literature and the Arts**	**Mathematics**
Week 5	Chapter 4 Patterns of Organization/Combining Ideas in Sentences Pgs. 64-167	Chapter 4 Evaluating Social Studies Materials Pgs. 82-98	Chapter 4 Evaluating Science Materials Pgs. 68-91	Chapter 4 Non-Fiction Prose Pgs. 85-109	Chapter 4 Decimals Pgs. 50-75
Week 6	Chapter 5 Writing an Essay/ Modifiers, Parallel Structure, Pronoun reference Pgs. 168-217	Chapter 5 U.S. History Pgs. 99-146	Chapter 5 Plant and Animal Biology Pgs. 92-121	Chapter 5 Prose Fiction Pgs. 110-156	Chapter 5 Fractions Pgs. 76-114
Week 7	Chapter 6 Polishing your writing/ capitalization and spelling Pgs. 218-271	Chapter 6 Political Science Pgs. 147-175	Chapter 6 Human Biology Pgs. 122-151	Chapter 6 Poetry Pgs. 157-187	Chapter 6 Probability, Ratio, and Proportion Pgs. 115-127
Week 8	Chapter 7 Test Taking Strategies Pgs. 272-286	Chapter 7 Behavorial Science Pgs. 176-209	Chapter 7 Earth Science Pgs. 152-183	Chapter 7 Drama Pgs. 188-220	Chapter 7 Percents Pgs. 128-157
Week 9	Writing Packet/ Essay Practice	Chapter 8 Geography Pgs. 210-240	Chapter 8 Chemistry Pgs. 184-220	Chapter 8 Commentaries on the Arts Pgs. 221-254	Chapter 8 Measurement Pgs. 158-179

	Writing	**Social Studies**	**Science**	**Literature and the Arts**	**Mathematics**
Week 10	Writing Packet/ Essay Practice	Chapter 9 Economics Pgs. 241-263	Chapter 9 Physics Pgs. 221-257	Literature Packet / Independent reading from suggested reading list	Chapter 9 Graphs and Tables Pgs. 180-201
Week 11	Writing Packet / Essay Practice	Social Studies Packet	Science Packet	Literature Packet / Independent reading from suggested reading list	Chapter 10 The Basics of Algebra Pgs. 202-223
Week 12	Review/ Essay Practice	Social Studies Packet	Science Packet	Literature Packet / Independent reading from suggested reading list	Chapter 11 Geometry Pgs. 224-275
Week 13	Review/ Essay Practice	Social Studies Packet	Science Packet	Literature Packet / Independent reading from suggested reading list	Chapter 12 Special Topics in Algebra and Geometry Pgs. 276-308
Week 14	Writing Skills Posttest Parts I and II Pgs. 287-306	Social Studies Posttest Pgs. 264-284	Science Posttest Pgs. 259-286	Literature and the Arts Posttest Pgs. 255-269	Math Packet

	Writing	**Social Studies**	**Science**	**Literature and the Arts**	**Mathematics**
Week 15	Review	Review	Review	Review	Math Packet
Week 16	Review	Review	Review	Review	Math Packet
Week 17	Official Practice Tests and Scoring	Official Practice Tests and Scoring	Official Practice Tests and Scoring	Official Practice Tests and Scoring	Official Practice Tests and Scoring
Week 18	Analyze weak points Final review	Analyze weak points Final review	Analyze weak points Final review	Analyze weak points Final review	Analyze weak points Final review
	GED Test	GED Test	GED Test	GED Test	GED Test

GAINING TIME BY KNOWING YOURSELF

Questions to ask about yourself:

1. Have you identified the most important tasks and responsibilities of your job?

____

____

____

2. List those things which should be done daily.

3. Determine those things that contribute most to success.

4. What do you get paid to do?

5. What things do you really like to do?

6. Should you be doing them?

7. Do you drag them out to fill time because you enjoy them and because they make you feel secure?

8. What can you delegate?

9. What can you do smarter?

10. What tasks do you dislike the most?

From: The Parent/Student Study Skills Connection Curriculum, Carol S. Molek, Project Director/Coordinator (Lewistown: TIU Adult Education and Job Training Center, 1989-1990), pp. 8-15, 18, 246-250, 104-109.

11. How much time do you spend planning:

    A. The day

    B. The week

    C. The month

    D. Long range planning

12. When do you work best:

    A. Prime time

13. Do you know how to catch your momentum?

14. How do you use miscellaneous time?

15. How do you use leisure time?

BARRIERS TO IMPROVING THE USE OF TIME

A. No real concern for the value or use of time

B. Before analyzing the present use of time, quickly stating that time problems are the result of the system

C. Failure to understand or designate the key functions in the job

D. Fear

- of change
- economics
- exposing lack of job skills

E. Lack of discipline and control

TIME MANAGEMENT

I. Communication

A. Ask for help - people cannot read minds
B. Do not yell!
C. Persist in all communication - giving up means losing out
D. Give CLEAR instructions
E. Explain jobs in terms of work not person doing the job
F. GOAL: Better time management for YOU

II. Delegation

A. ASK - communicate your need
B. Let family do chores - THEIR WAY
C. DON'T be critical - once done, forget it; no perfection here
D. Compliment completed job
E. Develop attitude that it is natural and expected for family to help

III. When There Is Too Much To Do

A. We don't plan properly
B. Don't be unrealistic about how long some things take to be done
C. Haven't set priorities or made needed decisions
D. Trying to impress someone or ourselves
E. Afraid to say NO
F. Have allowed the boss or family to be too demanding without doing anything active about correcting it

IV. Crises Management

A. Plan flexibility into your day
B. Anticipate the unexpected as well as the expected
C. Identify a REAL crises - don't over react
D. No perfectionism, no procrastination
E. Have a back-up BEFORE crisis occurs (extra babysitter, food, medicine, etc.)

V. Overcommitting

A. Realistic plans and priority setting
B. Ask two questions: WHAT IS THE BEST USE OF MY TIME?
WHAT WILL HAPPEN IF I DON'T GET THIS DONE NOW?
C. FORGET superwoman
D. Practice saying NO
E. Communicate problem to others - solicit their ideas

VI. To-Do-List

A. Do it now - first or last thing of the day
B. PLAN TIME INSTEAD OF WORK
C. Give each chore a time frame
D. Leave spaces for the unexpected

VII. Flexibility

A. You cannot organize OTHER PEOPLE'S TIME - ONLY YOUR OWN!
B. Planned flexibility gains control of your time

VIII. Morning Madness

A. Most people have ROUTINES, not PLANS
B. Questions of the morning - WHAT CAN I SKIP?
C. Spot your peaks and valleys

TEN STEPS TO EFFECTIVE TIME MANAGEMENT

1. Recognize and treat time as a scarce resource.
2. Operate on the assumption there is never enough time.
3. Be aware of how the forces within you dictate time use.

* habits
* attitudes
* perceptions
* values
* experiences
* emotions
* health

4. Be conscious of where your time is presently going
5. Determine your short term and long term professional goals.
6. Establish what is true job success.
7. Make a daily list showing those tasks and events contributing to points 5 and 6.

   Also, consider those events needed to meet demands.
8. Prioritize your tasks.
9. Build in planning and thinking time on a regular basis.
10. List the biggest time wasters and develop a plan of attack for each one.

TIME MANAGEMENT STRATEGIES

1. 80% of your best work is done in the first 20% of the time you spend on a task.

2. Use "sprinting" - pick a few days and start early - go late with all the speed and enthusiasm you can muster.

3. Avoid procrastination: when you leave a project, map out what the next step will be and jot it down. You'll find it's so much easier to return to the next time.

4. Set deadlines.

5. Generate momentum - set a time limit and do some routine parts of the project FIRST. Use an alarm if necessary.

6. Reward yourself AFTER completion of a task - procrastinators tend to avoid tasks by doing something they like first.

7. Pick one task a week on which to improve - decide when you will have success, make a plan, and explain it to all involved. Break down your plan into action steps (daily goals) and build in rewards when you get to the final goal.

8. Consolidate jobs - plan ahead.

9. Set your watch ahead.

10. Have some "quickie" tasks available for spare moments.

11. Schedule meetings with yourself (write it down!)

12. Turn a negative into a positive - instead of worrying about a broken glass, for instance, say something like, "I never liked that one anyway" or "Now I won't have to wash it" or "Now I have an excuse to clean the floor which I've been trying to do for a while."

13. DON'T try to move BOULDERS - break them down into rocks or find rocks to move instead or go around the boulder or go where there are NO BOULDERS, only rocks!

14. Develop a time philosophy - What is your time worth to you? Is it yours to waste if you want? How do you measure time? What are your time horizons? Is time important to you?

15. Set priorities - get organized!

16. Put high priorities first. WHY? We often use valuable time in attending to low priority and sometimes easier tasks because they seem more manageable. Know when you do your best work and use time wisely.

17. Subdivide large tasks into smaller ones.

18. Build a comfortable working atmosphere - a comfortable physical atmosphere! Have a workable but convenient and comfortable layout that includes pleasant lighting and nice furniture.

19. Know when and how to say NO!

20. Learn to delegate.

21. Avoid perfectionism - too time consuming and too much repetition!

22. DON'T OVER COMMIT - know when NOT to volunteer your time; it is precious!

23. Don't over schedule - track your time usage; be realistic.

24. LISTEN TO YOUR INNER VOICE - It's your best guide.

10 QUICK WAYS TO MOTIVATE YOURSELF *

1. Your goals should be written; long-term & short-term.
2. Review these goals each day and list all ideas that result.
3. Think only on what you want to do, not on what you don't want to do.
4. Visualize yourself as you want to be.
5. Use each experience as a lesson and apply what you learn.
6. Be open to new ideas that can apply for better physical, mental and moral health.
7. Influence others with suggestion and yourself with self-talk.
8. Commit inspirational sayings (affirmations) to memory. Use them during the day.
9. Learn to find help for yourself and then pass on the information to others.
10. Be a self-starter and say to yourself DO IT NOW!

* Associations Report, P.O. Box 12802, Salem, Oregon 97309-0802

TEN WAYS OF STUDY THAT WORK *

A new school year -- with all its possibilities and promise -- lies ahead for all of us. The marks you make this year can pay you well -- in helping you enter the college you want, in bringing you nearing to the lifework of your choice, perhaps in college scholarships.

At this moment the year's ahead -- make the most of it!

Efficient ways of study are not a mater of guess. Psychologists have been working for years on how to study. Research on the best methods of study has been conducted at top universities -- including Stanford, Ohio State, and Chicago. There, careful experiments with groups of students have thrown light on way of study that are best. By using these ways, you should learn more easily, remember longer, and save hours of study time.

The suggestions that follow are based on the results of these experiments.

1. **Make and keep a study schedule**
   Set aside certain hours each day for homework. Keep the same schedule faithfully from day to day. The amount of time needed for study will vary with the individual student and the courses on his or her schedule.

2. **Study in a suitable place -- the same place every day**
   Is concentration one of your study problems? Experts tell us that the right surroundings will help you greatly in concentration. Your study desk or table should be in a quiet place -- as free from distractions as possible. You will concentrate better if you study in the same place every day.

3. **Collect all the material you'll need before you begin**
   Your study desk or table should have certain standard equipment -- paper, pen, an eraser, and a dictionary. For certain assignments you'll need a ruler, paste, a compass, or a pair of scissors. With all your materials at hand, you can study without interruption.

4. **Don't wait for inspiration to strike -- it probably won't**
   We can learn a lesson about studying form observing an athlete. Can you imagine seeing an athlete who is training for a mile run sitting on the field waiting for inspiration to strike before he starts to practice? He trains strenuously day after day whether he wants to or not. Like the athlete we get in training for our tests and examinations by doing the things we're expected to do over a long period of time.

5. **A well-kept notebook can help raise your grades**
   Research shows that there's a definite relationship between the orderliness of a student's notebook and the grades he makes. Set aside a special section for each of the subjects on your schedule. When your teachers announce important dates for tests and examinations, you'll find how priceless orderly notes can be.

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* Bernice Jensen Bragstad and Sharyn Mueller Stumpf, Study Skills and Motivation (Massachusetts: Allyn and Bacon, Inc., 1987), pp. 357-359.

6. Make a careful record of your assignments

Why lose time phoning all over town to find someone who know the assignment? Put it down in black and white -- in detail -- in a designated place in your notebook. Knowing just what you are expected to do and when you are expected to do it is the first long step toward completing important assignments successfully.

7. Use "trade secrets" for successful study

Flash cards are "magic helpers." On the front of a small card you write an important term in history, biology, English, etc., and on the back, a definition or an important fact about that term. Carry your flash cards with you. At odd times take them out and ask yourself the meaning of the term. If you don't know, turn to the other side and review the answer.

The "divided-page" is another trick of the study trade. Make a dividing line down the center of a sheet of notebook paper. Then write important questions on the left side and the answers on the right. Use the "self-recitation" method of study. Cover the right-hand side and try to give the answer. Then check and recheck until you're sure you know the material.

A simple but effective study device is a "cover card." As you are studying, look at your notebook or textbook and read what you have just read -- and try reciting or writing the facts from memory. Check until you are sure you have mastered these facts.

8. Good notes are your insurance against forgetting

Learn to take notes efficiently as your teachers stress important points in class and as you study your assignments. Good notes are a "must" for just before-test reviewing. Without notes, you will often need to reread the whole assignment before a test. With them, you can call the main points to mind in just a fraction of that time. The time you spend in taking notes is not time lost but time saved.

9. Perhaps you've asked, "How can I remember what I've studied?" One secret of remembering is overlearning

Psychologists tell us that the secret of learning for the future is overlearning. Overlearning is continuing your study after you have learned the material well enough to barely recall it. Experts suggest that after you can say, "I have learned the material," you should spend in extra study one-fourth of the original study time. In an experimental study, students who overlearned the material remembered four times as much after 28 days had passed.

10. Frequent reviews will pay you well -- in knowledge, grades, and credits

Without review the average student can forget 80 percent of what he has read -- in just two week! Your first review should come very shortly after you study material for the first time. The early review acts as a check on forgetting and helps you remember far longer. Frequent review throughout the course can pay you well -- in pretest peace of mind.

All this is helpful only if you follow through!

TWELVE TIPS FOR STUDYING AND MANAGING YOUR TIME *

1. Plan a definite time for studying each day. This will discourage procrastination and prevent the pile-up of work.

2. Shorten your study time by knowing the purpose of each assignment, what to do, and how to do it before you leave class. Keep a record of all assignments in a special section of your notebook.

3. Predicting the amount of time needed for each assignment causes you to work harder so that you save time. By timing your assignments, you are more likely to concentrate and less likely to become bored.

4. Time yourself to see how long it takes you to read five pages of your textbook or a paperback. This will help you estimate the time needed to complete a reading assignment. Because a textbook is loaded with information, you may have to read some sections more than once. Even teachers have to reread material. Allow time for reflecting on what you read, too.

5. Pay attention to charts and diagrams. They can be shortcuts to understanding.

6. When a reading assignment is made, you can expect to have a discussion of the material or a quiz in class. Take a little time to review just before class so that you are ready to participate.

7. Every time you study spend ten minutes in review of previous assignments. These "refresher shots" are the secret for long-term memory. This habit of frequent review also results in less time needed for studying for a major test.

8. Use daytime for study if possible. At night you are likely to be less efficient.

9. After studying about forty minutes, take a five-minute break. This refreshes your mind so that you can concentrate better and finish faster.

10. Setting a "stopping time" at night will encourage hard work in anticipation of being through by ten o'clock or whatever time you set. Sometimes you may even beat the clock. The increased impetus helps you concentrate.

11. Don't cram for hours the night before a test. Instead, distribute your study in half-hour segments over a period of days.

12. Since learning is cumulative, new ideas must be incorporated with previous learning from lectures, readings, and lab experiments. You have to continuously make the connections and associations in your own mind. Putting it all together is easier if you schedule time daily to read, to think, to reflect, to review. Improved learning is the natural result of this approach to using your time.

*** Bernice Jensen Bragstad and Sharyn Mueller Stumpf, Study Skills and Motivation (Massachusetts: Allyn and Bacon, Inc., 1987), p. 237.**

MEMORY TIPS *

- **What's your attitude?**

What is you very favorite thing in life -- a person? baseball? music? reading? How tough is remembering new information about that particular thing? That answer reveals your "memory potential." Are you impressed? You should be! (One student knows the batting averages of all the best player in the base ball leagues.)

"But," you say, "math is not fun." Keep telling yourself that, and it never will be fun. Your prejudices affect your learning, so give some extra time to the subjects you dislike. Research indicates that the more you know about any subject, the more interested you become. Positive achievement is likely to follow.

Don't be victimized by your own biases. You more readily forget what you don't agree with, so reap remembering dividends by keeping an open mind!

- **Do you intend to remember?**

Or do you just want to get the assignment out of the way? Without a conscious decision to remember, you probably won't, and no one remembers what she or he has never really learned in the first place.

Have high expectations of yourself! Focus on how good you'll feel after reading, when you know the material instead of just the three sons that played on the radio while you "studied."

Also, studying subjects that are different, rather than similar, one after another (for example, history, then mathematics rather than political science) guards against interference and forgetting.

- **Do you personalize the material?**

Have you ever forgotten a friend's comments on why you're special? Or a compliment paid you by someone you truly admire? Probably not. This shows the power of your memory if you are personally involved. As much as you can, follow this same principle in studying. For example, while reading, ask yourself, "How am I affected by this?"

- **Do you "chunk" the learning?**

Right now, list three major ideas form the last reading assignment you completed. If you can't do it, then you're choosing to operate at a handicap. When you've finished studying a chapter and can recall seven or so major points, you've got those "key thoughts" that trigger your recall of the related significant details. A prime contributor to comprehension and memory, then, is to categorize ideas.

- **Do you "handle" the material?**

The more means you use to learn now material, the greater the likelihood you'll remember it. Draw picture to illustrate points. Talk over assignments with friends. Recite information to yourself. Write notes on important points. Each one of these aids will increase your chance of recalling information the next time you need it. "Handling" the new ideas results in their moving form short-term memory to long-term memory.

Remember -- if you don't use it, you will lose it!

*** Bernice Jensen Bragstad and Sharyn Mueller Stumpf, Study Skills and Motivation (Massachusetts: Allyn and Bacon, Inc., 1987), p. 241-242.**

- **Do you recite and review regularly?**
  Without any special study approach, you will forget 80 percent of what you learn within two weeks! Reverse that trend by reciting (speaking aloud) immediately after studying. Thereafter, review the content about once a week. When you feel that you've mastered the content, review it again -- overlearn it -- just to be sure.

- **Do you employ mnemonics?**
  Don't forget -- to memorize long lists of items, use the peg-word system, narrative chaining, or other memory systems. Your imagination is a powerful tool for memory, too!

BOOK PARTS - TOOLS TO LEARNING *

The parts of your text have been purposely designed as tools to help you learn. They are instruments that will guide you to the information and knowledge you seek. Because each of the different book parts has a specific purpose, you should learn to use each part effectively and efficiently.

1. The title page will give you the following information:
    a. The title of the text
    b. The names of the author(s) or editor(s). Sometimes the qualifications of the author(s) or editor(s) are given.
    c. The copyright date. The date might be a clue to the recency and validity of the text.
    d. The publisher of the text.
2. Table of Contents
    a. Gives an outline of major topics in the text.
    b. Gives an overview of the text.
    c. Helps you locate useful information, such as reference tables, maps, illustrations, answers to exercises, the glossary, and the index.
3. Glossary
    a. Arranged in alphabetical order.
    b. Gives meanings of important words used in the text.
4. Index
    a. Arranged in alphabetical order.
    b. By looking up key words, you can use the index as a short-cut to information.

*** Elissa Sommerfield and Frances Bailey, Study Skills Guide: A Survivor's Manual (Texas: Educational Skills, 1983), pp 23-28.**

Reading Defined

Reading is:

1. Understanding the general and special vocabulary in a text.
2. Finding the main idea and supporting details in a reading selection.
3. Comparing and contrasting information.
4. Thinking about what you are reading - evaluating.
5. Being able to locate and organize information.
6. Concentrating on material you are reading.
7. Remembering the ideas and concepts encountered.
8. Interpreting graphic aids.
9. Using an appropriate reading rate for the type and difficulty of the reading selection.
    a. Fastest rates
        (1) Scanning - used to locate a specific detail, such as a telephone number.
        (2) Skimming - used to find the main idea or to survey a selection.
    b. A moderate rate is appropriate for study reading, which focuses on finding main topics and supporting details.
    c. The slowest rate is used when the material being read requires the reader's total concentration. Word problems in mathematics and technical manuals are types of reading selections that often require the reader to use a slow reading rate.

SQ3R 1

S	SURVEY	Quickly glance over the reading assignment to answer the following questions: 1. What is the title? 2. What information is found in the opening paragraph (s) ? 3. Do the boldface headings seem to present a simple outline of the reading assignment? 4. What words are italicized to show emphasis? 5. What information do the illustrations, charts, and graphs provide?
Q	QUESTION	1. Turn the boldface headings into questions that provide a purpose for reading. 2. Who? what? when? where? how? or why? are questions that should be asked.
R	READ-AND-REFLECT	1. Read the selection to find the answers to your questions. 2. Underline the answers to your questions, but be selective when underlining. Underline only the most important words. 3. Be sure to use the appropriate reading rate for the type of material you are reading.
R	RECITE	1. Check your retention of the information. 2. Use a blank card to cover the text under the first boldface heading. Again turn the boldface heading into a question. Then see if you can recite the answer aloud. Use the same procedure with the rest of the headings. 3. Reciting information aloud is a valuable survival technique. Using it often will help you increase your retention of the material studies. 4. Use your visual, auditory, and kinesthetic senses to increase the retention of material. George J. Dudycha urges students to "See it! Say it! Hear it! Draw it or write it!" 2

R **REVIEW**

1. Skim the boldface headings again.
2. Try to answer the questions you have formulated.
3. If you forget some information, read the underlined parts of your text again. Then cover the text and once more try reciting the answers to your questions.
4. Study the information until recall is automatic.
5. REVIEW OFTEN TO INCREASE YOUR RECALL OF INFORMATION.

1 Francis P. Robinson, Effective Study (New York: Harper & Row, 1946), p. 28.

2 George J. Dudycha, Learn More with Less Effort (New York: Harper & Row, 1957), p. 96.

Skimming for Main Ideas

1. Read only the main idea (topic sentence) of each paragraph.
2. Read the title, subheadings, and words in boldface print or italics.
3. Watch for words that show relationships - however, moreover, in the first place, etc.
4. Use the six key question words to help you see the author's purpose:
    a. Who?
    b. What?
    c. Where?
    d. Why?
    e. When?
    f. How?
5. Don't let details slow you down.

STUDY READING

1. Concentrate!
2. Know why you are reading. What is the purpose?
3. Keep a brisk pace or your mind will wander.
4. Take notes:
    a. On divided paper.
    b. In outline form.
    c. Summarize.
        (1) First take notes on the main ideas and important details.
        (2) Be sure to answer the six key questions - who? what? where? why? when? and how?
        (3) Then write a summary from your notes
5. Keep in mind what you have learned about vocabulary study, finding the main ideas, and other reading skills.

6. Underlining forces concentration.
7. List possible test questions.
    a. Which information might appear in identification questions?
    b. What essay questions might be asked?
8. REVIEW OFTEN!

VOCABULARY DEVELOPMENT

1. Make a study sheet of the specialized vocabulary for each subject.
2. Make a flash card for each new word in your reading assignments.
3. USE YOUR DICTIONARY!
4. Practice identifying words through their use in context.

SPELLING IMPROVEMENT

1. Keep a spelling list of the words you often misspell.
2. Practice writing the words you need to learn.
3. Develop a list of spelling hints to help you. Examples are:
    a. There is always a rat in separate.
    s. A friendly chief says hi to you.
4. Put a spelling dictionary in your notebook. USE IT OFTEN!
5. If spelling is difficult for you, be sure to ask someone to proof the papers you write.

What Is the Message?

Reading and writing cannot be separated. Writers write to be read. A writer has a purpose. The purpose may be to inform, to persuade, or to entertain. When creating a message, a writer must always keep the reader in mind. When reading, the reader must always think about the writer's intention.

When reading a reader must bring the necessary background to what he or she reads. Background includes life experience, stored knowledge, and common language. By putting background with the message, the reader is able to understand what the writer is saying.

Readers' backgrounds are different. What one person may get from a message (and bring to it) will differ from what another gets. It is the writer's job, however, to make it as easy as possible for the reader to understand the message.

Writers have different ways to get their ideas across. Sometimes their message is loud and clear. The message tells the reader at the beginning what he or she will read about. At other times, the message may be understated, if stated at all. Then the reader must put forth more effort to understand what the writer means. This is mainly true for stories and poems.

In this chapter, you will practice your skills in interpreting a writer's message by

-summarizing the main idea
-making inferences
-drawing conclusions
-predicting outcomes

When you read, ask yourself often: What is the writer saying? What does the writer mean?

The Stated Main Idea

Summarizing the *main idea* is a skill that you perform daily without even thinking about it. For instance, if you gave someone the results of a championship football game, you wouldn't deliver a play-by-play account of what actually happened on the field. You would, instead, give a short version of the events that include only the main idea *(who won?)* and the important details *(by what score? by whose efforts?)*

Martha J. Barnes, Reading and Critical Thinking in the Content Areas (Chicago: Contemporary Books, Inc., 1988), pp. 2-4, 8-9, 13-14, 19, 24-25, 31-32, 38-39, 44-46, 66-67, 73, 80-81, 95-97.

In materials that you read, the following questioning strategy can help you find the main idea and the important details that support it. You should ask yourself the five fact questions:

-WHO does the event involve?
-WHEN did it take place?
-WHAT event took place?
-WHERE did it take place?
-HOW did it happen?

Let's see how this method can be applied to a reading passage. Read the passage below. As you read, ask yourself the five questions.

The Case of the Disappearing Checks

In the late 1980s, banking fraud reached new heights. The practice of check-kiting -writing bad checks- was outdone by the passing of disappearing checks.

The scam involved cheating banks in the Midwest, South, and West out of thousands of dollars. First, the crooks opened phony accounts. Then they cashed chemically treated checks against the accounts. Only hours after being presented to tellers for cash, the checks turned to confetti! In Chicago alone, checks totaling $50,000 were cashed. According to the FBI, once the checks had been cashed, the crooks closed the accounts.

Bank tellers were advised to take several measures to prevent being cheated. One step was to photocopy any check that had an oily surface. By taking such an action, the FBI hoped to catch the culprits and solve the case of the disappearing checks.

To identify the main idea of this passage, apply the five-question method in the following way:

WHO?	crooks
WHAT?	cheated bank out of thousand of dollars
WHERE?	the late 1980s
HOW?	by cashing chemically treated checks that turned into confetti hours after they were cashed

Main idea sentence: In the late 1980s, crooks cheated banks in the

Midwest, South, and West out of thousands of dollars by cashing chemically treated checks that turned into confetti hours after they were cashed.

TIP: Often, titles and headlines contain key ideas that point to the main idea. Sometimes you can predict what the main idea will be by reading the titles.

The Unstated Main Idea

You have practiced summarizing the main idea by using the five-question method. Sometimes, however, the main point of an article is not stated. Instead, the author provides details or key ideas that point to the main idea. The reader must put all the facts together and determine the main idea. This is called ***inferring the main idea.***

Read the paragraph below to discover the main idea.

To Smoke or Not to Smoke?

In San Francisco, as in many other U.S. cities, smoking is not permitted in public buildings and in many offices. In addition, many restaurants across the nation have established nonsmoking sections for customers who are offended by tobacco smoke.

The federal government has even required that smoking be banned on flights whose travel time is less than two hours. One airline, Northwest, has taken an even more extreme position. It bans smoking on all flights except those going to Europe, Asia, and Hawaii.

From the details provided, choose the unstated main idea from the statements listed below.

a. The link between smoking and lung cancer, heart disease, and emphysema has been proved.

b. Smokers are being deprived of their constitutional rights.

c. Nonsmokers outnumber smokers in America.

c. Nonsmokers are winning the battle against secondhand smoke in public places.

If you chose *d*, you chose the correct answer. The entire thrust of the paragraph is the impact nonsmokers are having in public places. The places discussed are:

-public buildings and offices
-restaurants
-airplanes

Although it is not stated directly, the entire paragraph shows nonsmokers winning the battle against secondhand smoke in public places.

TIP: To find the unstated main idea, list the key ideas or details. Usually, they "add up" or point to a central thought that the paragraph is getting across.

Inferences

When you infer, you "read between the lines" to figure out what is being said. For example, if you called a friend and she responded by saying, "Oh, it's you," you might infer from the comment and tone that she was expecting to hear from someone else or that she didn't want to talk to you. You had to take a hint from the response and tone.

Much like a detective who solves a mystery, you can make inferences from what a writer has suggested. To infer the writer's message, follow these steps:

-Gather clues and details (evidence).
-Analyze (think carefully about) the evidence.
-Make a decision based on these facts.
-Test your decision against the facts given.

Let's apply this method to the following paragraph. Pay close attention to the evidence that helps you make an inference.

You are stuck in traffic on an expressway at noontime. Usually few cars are traveling the expressway at that time of day. All of a sudden, you hear sirens and see flashing lights. Then an ambulance and police cars speed by. As you inch closer to the flashing lights ahead of you, you observe two overturned cars. What might you infer from what you have seen and heard?

You might guess that someone has been injured in an automobile accident. Let's examine the evidence that led you to this conclusion.

Gather Evidence
-A traffic jam during non-rush hours
-Sirens and flashing lights
-Speeding ambulance and police cars
-Overturned cars

Analyze Evidence
-Traffic jams seldom occur during midday.
-Flashing lights usually mean an emergency.

-A speeding ambulance means someone is hurt.

Evaluate Your Conclusion

-Based on what you observed, heard, and already know about traffic jams, emergency vehicles, and car accidents, you could infer that someone has been injured in an automobile accident.

> **TIP:** In making inferences, put all the clues, facts, or details together. If facts are incomplete, you cannot make a valid inference. That would be jumping to conclusions.

Conclusions from Facts

To draw a ***conclusion***, you must first consider all of the facts provided in a given situation. For example, suppose you invite a co-worker to lunch and she refuses because she says she brought her own lunch. Later, however, you see her eating lunch with another co-worker. When you ask her to go to the office party with you, she replies that she isn't going. Then, she shows up with the same co-worker with whom she had lunch, and she gives you no explanation.

From these facts, which one of the following conclusions can you come to?

______a. She is a loner.
______b. She doesn't care to socialize with co-workers.
______c. She prefers to keep her relationship with you on a professional level.

If you chose *c*, you chose the best conclusion, since on two occasions she refused to socialize with you and went with another co-worker. Choice a is not the best conclusion because no facts are provided to support the conclusion that she is a loner. Choice b is not the best conclusion because you saw her twice in the company of another co-worker. The facts "add up" to the conclusion in c.

> **TIP:** To draw a correct conclusion, list *all* of the facts available to you. Then think of reasonable explanations for the facts. Finally, eliminate any possible explanations that all the facts together do not support.

Predictions and Outcomes

When you ***predict an outcome***, you guess what will happen next based on the pattern of events that happened before. For instance, if on a bright, warm summer day, the air suddenly turns cool, clouds blow in, and the sky darkens, you predict that it will rain. Further, if you look up into the sky and spot a bolt of lightning, you predict that a thunderclap will follow within seconds. Both of these predictions are based on the events that preceded them.

Similarly, in reading, you can increase your understanding of what you read by improving your ability to anticipate, or predict, what is likely to happen.

The following strategy can help you to predict an outcome:

-List the events or actions in order.
-Think about how the events and actions might be connected.
-Relate these events and actions to past experience.
-Make a reasonable guess as to what will happen based on the evidence and your own experience.

Read the following case study. Then choose the correct prediction based on the facts given.

Fickle Fitzpatrick

Mr. Fitzpatrick amazes me with his "weight reduction" programs. Just last year, for example, when he was keynote speaker at the employee banquet, he gained twenty pounds instead of losing the thirty he promised he would.

The year before that, he joined a health club. He exercised every day and consumed fewer calories. At the end of three months, however, he began making excuses about why he couldn't get to the spa more often.

After the health club failure, he joined Weight Watchers but stopped going because he was the only man who attended. As far as the Scarsdale Diet he was supposed to follow, forget it. Fitz's latest idea is to join a neighborhood walking club to "walk off" the weight.

Mr. Fitzpatrick announced plans to undergo hypnosis to lose weight. Based on his past record, you can reasonably predict that he will

______a. lose the weight he desires
______b. fail to follow through with his plan
______c. gain more weight than ever before

If you chose *b*, you predicted the correct outcome based on Mr. Fitzpatrick's past behavior. List three facts that you based your prediction on.

1. ______________________________

2. ______________________________

3. ______________________________

Your prediction was likely based on three of these facts:

1. Mr. Fitzpatrick gained twenty pounds instead of losing thirty.
2. He joined a health club but stopped attending regularly.
3. He joined Weight Watchers but stopped going because he was the only man in attendance.
4. He didn't follow through with the Scarsdale Diet.

Each of the four facts show Mr. Fitzpatrick's inability to stick to a plan. Based on these past events, it is highly unlikely that Mr. Fitzpatrick will follow through on his plan to undergo hypnosis to lose weight.

> **TIP:** In making predictions based on what you read, be sure that you have enough facts to support the prediction. Remember, a prediction is only a reasonable guess.

Cause and Effect

When we talk about ***cause and effect***, we are telling why something happens. For example, if Shop Rite Foods is the only store in your neighborhood, and all of the residents shop there, the management will be less likely to offer special deals to attract shoppers. However, if Buy Low Foods opens and offers lower prices and better service, it is likely to draw shoppers from the other store. As a result, Shop Rite Foods might have to offer deals to attract shoppers.

The opening of a new store (the cause) leads to lower prices and better service from the older store (the effect).

Every time you use the word because in explaining why something happens, you are showing a cause-and-effect relationship.

> Abraham Lincoln signed the Emancipation Proclamation because he wanted to save the Union.

What was the action that occurred? ____

____

Why did it happen? ____

____

If you wrote: *Abraham Lincoln signed the Emancipation Proclamation*, you identified the ***effect*** - the *what* in the sentence.

If you wrote: *because he wanted to save the Union,* you identified the

cause -the *why* in the sentence.

Now, let's change the order of ideas of the sentence:

> Because he wanted to save the Union, Abraham Lincoln signed the Emancipation Proclamation.

Compare the order of the words in this sentence to the order of the words in the earlier sentence. The cause-and-effect relationship remains the same even when the order of ideas changes.

Because he wanted to save the Union,	→	Abraham Lincoln signed the Emancipation Proclamation
Cause		**Effect**

Now try changing the order of the cause and effect. Rewrite the sentence below in the boxes provided.

> Deaf students boycotted classes because they wanted a deaf person to be president of their school.

	→	
Cause		Effect

You should have rewritten the sentence this way:

Because they wanted a deaf person to be president of their school,	→	deaf students boycotted classes.

TIP: These clue words usually show a cause-and-effect relationship: *because, since, as a result of, due to, therefore, consequently, follows, if...then, brought about.*

Sequence

Writers often organize their ideas in the order in which they happen. The step-by-step ordering of events is called ***time order*** or ***sequence***.

If you've ever followed a recipe to bake a cake, you had to follow time-order pattern. The first step in making the batter is to cream together the shortening, eggs and sugar before adding the four. If you put the flour in and then add the other ingredients, chances are that the cake won't turn out the way it should.

Sequence is used especially in social studies when a writer covers historical events that happen over a period of time. Time order may also be used in science to list the steps in an experiment or to show the stages of a process. In literature, a writer of stories may center the action around a plot. A plot is a sequence of events.

The passage below explains how to make and use a salve to treat infections. The recipe for this home remedy comes from southern Appalachia. As you read this passage, look for words that signal time order. Underline the words that indicate the order of events or the passage of time.

A Salve That Can Save You Money

If you want to draw out the infection from a boil, sore, or cut, or treat a bruise, you may save some money by making your own salve.

Begin by making the main ingredient, tallow. Tallow is made by first taking the fat from beef. Then cook the fat in a little water, stirring it constantly so that it doesn't stick to the pan.

After all of the fat has been rendered (melted), strain the drippings, and set the tallow aside to harden. When the tallow has hardened, take a palmful and add a level teaspoon of brown sugar, a level teaspoon of salt, and a few drops of turpentine. Mix these ingredients well before adding the final one, a few drops of camphor oil.

The completed salve can now be applied directly to the wound and covered for about eight hours. If the infection is not cured in eight hours, repeat the application.

Were you able to find the words that signaled the time order? You should have underlined the words *begin, first, then, after, when, before, final*, and *now*.

To test whether or not you understood the sequence of steps in making tallow, list them.

-Step 1: Take the fat from beef.
-Step 2: Cook the fat in water, stirring constantly.

-Step 3: Strain the pan dripping.
-Step 4: Set the tallow aside to harden.
-Step 5: Mix the tallow, brown sugar, salt, and turpentine.
-Step 6: Add camphor oil.
-Step 7: Apply the salve.

TIP: These signals indicate a time-order pattern: first, second, third; next; before; later; last; earlier; final; then; after; since; finally begin; *a...b...c...* ; now; while; until.

Comparison and Contrast

Comparing and contrasting -looking at similarities and differences- is part of making a decision. For example, when you decide what kind of job you want, what kind of car you want to buy, or what kind of apartment you want to rent, you are comparing and contrasting.

In making your decision, you look at advantages and disadvantages. In buying a car, for example, you must choose between a fuel-efficient two-door compact and a comfortable four-door station wagon. How do you determine the right one to buy? You'd probably consider the pluses and minuses of each. You'd compare and contrast both cars in terms of gas mileage, roominess, cost, upkeep, and so on.

The following passage below compares and contrasts city living and suburban living. As you read the passage, look for ideas about these two lifestyles that are similar and ideas that are different. Under the column *Similarities*, write things that are similar for cities and suburbs. Under the column *Differences*, write the things from the passage that are different. One is done for you.

City Living Versus Suburban Living

The U.S. population has shifted during the last century from living mainly in rural areas to living in urban area. Urban areas include cities and suburbs. Similarities and differences exist between living in the city and living in the suburbs.

Cities and suburbs are alike in that both usually provide many recreation activities. Also, both types of communities can offer services that rural areas cannot afford. These services include regular garbage pick up, adequate fire and police protection and public libraries. These services must be paid for, however. As a result cities and suburbs generally have a greater tax burden than rural areas.

In spite of the similarities, many differences exist between city living and suburban living. The main difference is probably the availability of space. Suburbanites seem to take space for granted. For suburban apartment dwellers, a parking space is often only a few steps from their door. In contrast, city dwellers view space as a precious thing. They are lucky if the find a parking space after minutes of driving around looking for one.

Yard space is also plentiful in the suburbs. There, houses are usually far enough apart to allow room for a two-car garage and play areas for children. In the city, though, yard space in many parts is severely limited. Children must go to parks to play.

Sometimes city houses are so close together that it is hard to tell where one house ends and another begins. One advantage of this closeness of homes is that, in the city, people have a chance to know their neighbors. In the suburbs, for the most part, houses are so far apart that contact with neighbors is infrequent, if not difficult.

Similarities

1. Cities and suburbs provide recreational facilities.
2. ____________________
3. ____________________

Differences

	Suburbanites		City Dwellers
1.	parking spaces nearby	vs.	space is a precious thing
2.		vs.	
3.		vs.	
4.		vs.	
5.		vs.	

You may have noticed that the passage mentions many more differences than similarities. You should have listed these similarities: cities and suburbs provide recreational activities; cities and suburbs provide services that rural areas cannot afford; cities and suburbs generally have a higher tax burden than rural areas.

You should have listed these differences: parking spaces nearby vs. space is a precious thing; yard space is plentiful vs. yard space is limited; play areas for children vs. children must go to parks; houses far apart vs. houses close together; people can get to know their neighbors vs. contact with neighbors infrequent.

TIP: These clue words indicate similarities: *and, also, likewise, in addition to, in the same way, similarly.* These clue words indicate differences: *although, however, yet, but, on the other hand, on the contrary, while, conversely, versus, in contrast to, either...or.*

Invalid Conclusions

When people come to a conclusion without having all the facts needed to back it up, or interpret facts in the wrong way, they are making an ***invalid conclusion.*** Invalid conclusions are mistakes in reason.

For example, if you spotted an elderly man searching through trash cans in the cold, you might conclude that he is a homeless person looking for food. But do you have all of the facts needed to draw this conclusion? The man could have a home and a loving family who is looking for him. He might be confused, or he might be a victim of Alzheimer's disease, which affects memory and behavior. Or he could be looking for returnable aluminum cans to redeem for deposit. To draw a conclusion about the man's situation, you need to have all the facts and must consider them carefully.

Read the dialogue below to determine why the conclusion reached is invalid.

18-YEAR-OLD-DAUGHTER: Sorry I'm late, Mom. But on the way home I had a flat tire.

MOTHER: I'll bet you did! The last movie ended three hours ago. How long does it take to fix a flat tire? Stop trying to pull the wool over my eyes...Tell me the truth.

DAUGHTER: Mom, I am telling you the truth. I had a flat tire and was stranded on Route 43...

MOTHER: Don't bother trying to explain. I know where you were. You went to that after-hours hangout-Harley's. That's where your Dad found your older sister when she didn't come home at a decent hour.

The mother's conclusion is invalid because

a. the daughter's excuse is airtight
b. she has no proof to refute the daughter's explanation
c. parents never give their children the benefit of the doubt

If you chose *b*, you chose the correct reason that explains why the mother's reasoning is faulty and the conclusion is invalid. The mother has no proof that her daughter did not have a flat tire. Moreover, it is faulty reasoning to assume that one person is guilty of an action because another person was guilty of this same action. The mother's conclusion *could* be correct, but since she lacks proof, she can't be certain.

Values

What is important to you? Is it owning a home or being the best dressed among your friends? Is it being honest or withholding the truth to protect yourself or someone else? It is working on job paying "big bucks" that you despise or having a job that you love but that pays little money? Your answers to these questions reflect your values.

A ***value*** represents a belief about what is important in life. It influences the decisions that we make. Values can be based on three things:

-standards of right and wrong as determined by religion or upbringing
-cultural needs or customs
-individual taste

Not only are your values influenced by what you approve of, but they are are influenced by the values of others such as your parents, teachers, friends, or religious leaders. In other words, your values are the result of many influences in your life.

In the situation below, determine what value is more important and write the appropriate words in the blank provided.

> A model refuses to advertise a product that she knows doesn't live up to its claims in spite of being offered $50,000 to do it. The model probably values ____________over ____________ .

You should have written that the model values honesty or integrity over money, or something similar. In this example, the values are clear-cut. In other things you read, the values clash may be less clearly drawn.

Fact, Opinion, and Hypothesis

"It is a fact that the heads of most households work."

"It is a fact that mothers who stay home their children are better than those who work."

"It is a fact, during the year 2010, most corporations will have day-care centers for their employees."

All of the preceding statements begin with *It is a fact that*. But are they really facts? Read the next paragraph to find out.

Facts are statements that can be proved with data- numbers or information. Opinions are beliefs that are influenced by one's feelings, background, values, and outlook about life in general. Opinions are debatable. Hypotheses can be proved or disproved with the passage of time and additional information or data.

Based on this explanation, write fact after the statement that is a fact, opinion after the statement that is an opinion, and hypothesis after the statement that is a hypothesis. Then tell why it fits one of these categories.

1. It is a fact that, during the year 2010, most coporations will have day-care centers for their employees______________________________

Reason: ____

2. It is a fact that mothers who stay home with their children are better mothers than those who work. ______________________________

Reason: ____

3. It is a fact that the heads of most households work. ________________

Reason: ____

Based on the explanation provided above, you should have concluded that:

-Statement 1 is a *hypothesis* because it is not known now but can be proved (or disproved) after the passage of time (during the year 2010). After the year 2010 passes, you could get information about the number of large corporations that provide day-care facilities for their employees.

-Statement 2 is an *opinion* because it is based on a person's feelings. What makes one mother "better" than another is a matter of opinion.

-Statement 3 is a *fact* because it can be proved by studying data about the occupational status of heads of households.

You may have noticed that all of the statements at the beginning of this topic begin with the words *It is a fact*. However, not all of these statements are facts. Other introductory phrases that are used often but that do not necessarily indicate facts are: the truth is; as a matter of fact; the point is; and in fact.

TIP: The following phrases indicate an opinion: *in my opinion; I think / believe / feel*; and *should be*. Also, emotionally charged words like *evil, beautiful*, and *wonderful* indicate that an opinion is being expressed.

Analogy

An analogy is a form of comparison and contrast. It suggests similarities between two things that are otherwise unalike. An analogy can be written as word analogy in which relationships between certain words are shown, or it can be the framework around which an entire message is written.

In the essay by Sydney J. Harris that you read earlier, an analogy is made between writing and music. We can show this relationship as a word analogy in shorthand:

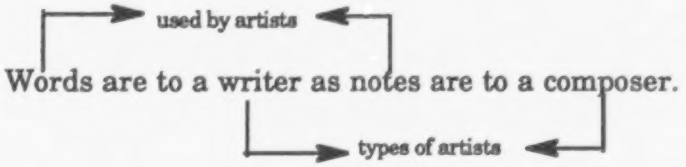
words: writer:: ______: composer

This means "Words are to a writer as ______ are to a composer."

To complete this analogy, you need to dertermine the connection between two words and then find the other pair of words that have a similar relationship. Your thinking should follow this pattern.

QUESTION:	What is the relationship of writer to composer?
ANSWER:	Writers and composers are types of artists.
INFERENCE:	If writers and composers are types of artists, and writers use words, then composers must use notes.

Let's rewrite the analogy to show the thinking pattern:



Words are to a writer as notes are to a composer.

The analogy is sound. Although writing and composing are different, words are the writer's tools just as notes are the tools of the composer.

The next exercise gives you practice in working with a word analogy. Supply the word that shows the relationship in the analogy. Then complete the steps that follow.

Furnace is to warm as air conditioner is to______.

Complete the thinking pattern by answering the following question and describing the inference.

QUESTION: What is the relationship between *furnace* and *air conditioner?*

ANSWER: ____

INFERENCE: If a furnace keeps you warm, then an air conditioner

____

You should have completed the analogy with answers similar to these:

-Furnace is to warm as air conditioner is to cool.
-Both are equipment that *affect a room's temperature.*
-If a furnace keeps you warm, then an air conditioner *keeps you cool.*

This analogy is sound because a furnace produces warm air just as an air conditioner produces cool air.

Now, write your own word analogy using these terms: *brush, sculptor, painter, chisel.* Write the analogy first in sentence form, then in shorthand using the dots.

sentence form: ____

shorthand form: ____

You should have written: *brush is to painter as chisel is to sculptor, and brush: painter:: chisel: sculptor.* Another way of writing it would be *chisel is to sculptor as brush is to painter, and chisel: sculptor:: brush: painter.*

In many cases, writers use analogies to show the relationship between an idea that is familiar to the reader and one that is unfamiliar. If you understand one idea, sometimes you can relate it to a new and different idea. Good writers use analogies in literature, science, and social studies materials.

Usually, analogies are sound. However, sometimes writers or speakers use analogies in which the relationships of the ideas being compared are neither clear nor similar. These are faulty analogies.

TIP: To determine if a writer's analogy is sound, decide whether the ideas being compared resemble each other or have similar properties. If no resemblance or similar properties exist, then the analogy is unsound.

WRITING

To The Student:

This writing (English) packet contains the following sections:

1. Parts of Speech: Definitions of Terms
2. Irregular Verb List
3. Pronoun Unit
4. GED Spelling List
5. Writing Unit
6. Focus on the GED Essay
7. Suggested GED practice writing topics

We want to direct your attention and your focus of study specifically to the Pronoun Unit and the Writing Unit. First of all, an extremely troublesome area in English is pronouns. This pronoun unit is an excellent way for you to learn, re-learn, and/or review the different types of pronouns and their specific uses. We particularly liked the set-up of the material and the explanation given for each type of pronoun in this unit. The pronoun unit coupled with the exercises in your textbook will provide for you a nice combination of material and will greatly enhance your understanding of and your ability to use pronouns correctly. Our suggestion is that you work through the pronoun unit in this packet first to get a basic understanding of pronouns and then do the reading and exercises on pronouns in your textbook.

The Writing Unit contains a variety of writing exercises that are specifically designed to increase your ability to write as well as your ability to use critical thinking. This particular writing unit is used by our writing instructor in English class as part of the writing instruction. The exercises cover every facet of thinking and writing from identifying main ideas to outlining to making inferences to distinguishing opinion from fact. We recommend that you work through the entire writing unit exercise by exercise. The exercises in this unit together with the specific writing exercises in your textbook will provide a solid foundation for building good writing and thinking skills.

We would also recommend that you keep a journal. Throughout your textbook, there are specific suggestions of writing topics, and there is a list of suggested GED practice writing topics included in his packet. The more you practice writing, the more confident you will feel about writing the essay on the GED Test.

PARTS OF SPEECH

DEFINITION OF TERMS

1. NOUN - names a person, place, thing or idea. There are 2 types of nouns:
a) common b) proper

Common nouns name any one of a group of persons, places, things or ideas and therfore, do not need to be capatilized. PROPER NOUNS name particular persons, places, things, or ideas and are always written with a capital letter.

2. PRONOUN - a word used in place of a noun while still naming a person, place, thing, or idea.

3. ADJECTIVE - modifies (describes, defines) a noun or pronoun. Adjectives answer the following questions: which one? what kind? how many? The articles a, an, and the are classified as adjectives. A and an are indefinite articles and the is a definite article.

4. VERB - expresses action or helps to make a statement; shows existence. A verb can be classified as either action or linking. Linking verbs are all forms of the verb to be:

be
being
am
is
are
was
were

shall be
will be
has been
have been
had been
shall have been
will have been

should be
would be
can be
could be
should have been
would have been
could have been

Other common linking verbs are:

appear
become
feel
grow
sound
taste

look
remain
seem
smell
stay
turn

VERB PHRASE - main verb plus auxiliary (helping verb.) An auxiliary verb can be any form of the verb to be in addition to the following verbs:

has
have
had
shall
will

can
say
should
would
could

might
must
do
did
does

To determine if a verb phrase is action or linking, look at the main verb in the phrase. The auxiliary NEVER determines action of linking.

EXAMPLE: SHE HAD BEEN THINKING OF THAT.
AUX. AUX. MAIN

5. ADVERB - a word used to modify a verb, an adjective, or another adverb. An adverb answers the questions: how? when? where? why? to what extent? (How long or how much?) REMEMBER: A great number of adverbs end in ly and can easily be identified by that ending. However not all ly words are adverbs and not all adverbs end in ly.

EXAMPLE: not, never, later, well, here, there, how, ever, too, etc. (These words are all adverbs but do not end in ly.)

PARTS OF SPEECH

DEFINITION OF TERMS

2.

6. PREPOSITION - a word that shows the relationship of a noun or pronoun to some other word in a sentence. A preposition always appears in a phrase. That phrase begins with a preposition and ends with an object. The object is ALWAYS a noun or pronoun. The following list shows the most commonly used prepositions:

aboard
about
above
across
after
against
along
among
around
at
before
behind
below
beneath
beside
besides
between

beyond
by
but (meaning except)
concerning
down
during
except
for
from
in
inside
into
like
near
of
off
on

out
past
over
since
through
throughout
till
to
toward
under
underneath
until
up
upon
with
within
without

COMMON COMPOUND PREPOSITIONS

according to
as to
aside from
because of
by means of

in addition to
in front of
in place of
in spite of
instead of

on account of
out of
owing to
prior to

7. CONJUNCTION - joins words or phrases or clauses. There are 2 types of conjunctions: co-ordinating and correlative

co-ordinating	correlative
and	both...and
but	not only...but also
or	either...or
nor	neither...nor
for	whether...or
yet	

NOTE: FOR is used as a conjunction only when it means because. Otherwise, it is a preposition.

8. INTERJECTION - an exclamatory word that expresses emotion or strong feeling. It has no grammatical relation to the rest of the sentence. If the emotion expressed is very strong, the interjection is punctuated by an exclamation point! If the emotion expressed is not strong, the interjection may be followed by a comma(,).

Irregular Verbs

An irregular verb is one that forms its past and past participle usually, but not always, by a vowel change within the verb. Irregular verbs can cause problems in standard verb usage because there is no single rule that applies to them. The key to learning these irregular verbs thoroughly is a matter of memorizing, visualizing, and most importantly, using!

Present	Past	Past Participle (has, had, have)
1. arise	arose	arisen
2. bear (to carry)	bore	borne
3. beat	beat	beat
4. become	became	become
5. begin	began	begun
6. bite	bit	bitten
7. blow	blew	blown
8. break	broke	broken
9. bring	brought	brought
10. burst	burst	burst
11. catch	caught	caught
12. come	came	come
14. creep	crept	crept
15. dive	dove (dived)	dived
16. do	did	done
17. draw	drew	drawn
18. drink	drank	drunk
19. drive	drove	driven
20. eat	ate	eaten
21. fall	fell	fallen
22. feel	felt	felt
23. fight	fought	fought
24. find	found	found
25. flee	fled	fled
26. fling	flung	flung
27. fly	flew	flown
28. forget	forgot	forgotten
29. freeze	froze	frozen
30. get	got	gotten
31. give	gave	given
32. go	went	gone

	Present	Past	Past Participle (Has, had, have)
33.	grow	grew	grown
34.	hang (picture, object)	hung	hung
35.	hang (a person)	hanged	hanged
36.	have	had	had
37.	hear	heard	heard
38.	hide	hid	hidden
39.	hold	held	held
40.	hurt	hurt	hurt
41.	keep	kept	kept
42.	know	knew	known
43.	lay (to place or to put)	laid	laid
44.	lead (to guide)	led	led
45.	leave	left	left
46.	lend	lent	lent
47.	let	let	let
48.	lie (to rest or recline)	lay	lain
49.	lie (to tell an untruth)	lied	lied
50.	lose	lost	lost
51.	ride	rode	ridden
52.	ring	rang	rung
53.	rise	rose	risen
54.	run	ran	run
55.	say	said	said
56.	see	saw	seen
57.	set	set	set
58.	shake	shook	shaken
59.	shine (sun, moon)	shone	shone
60.	shine (shoes)	shined	shined
61.	show	showed	shown
62.	shrink	shrank	shrunk
63.	sing	sang	sung
64.	sink	sand	sunk
65.	sit	sat	sat
66.	speak	spoke	spoken
67.	steal	stole	stolen
68.	sting	stung	stung
69.	swear	swore	sworn
70.	swim	swam	swum
71.	swing	swung	swung

Present	Past	Past Participle (Has, had, have)
72. take	took	taken
73. teach	taught	taught
74. tear (to rip)	tore	torn
75. throw	threw	thrown
76. wake	woke	woken
77. wear	wore	worn
78. write	wrote	written

The past participle is ALWAYS used with has, had, or have. Anytime you see has, had, or have, you MUST use the past participle form of the verb.

Irregular Verbs

Catagory #1 (Present/Past Participle same form-Past changes)

Present	Past	Past Participle
1. become	became	become
2. come	came	come
3. run	ran	run

Catagory #2 (Past/Past Participle same form-Present remains unchanged)

Present	Past	Past Participle
1. bring	brought	brought
2. catch	caught	caught
3. creep	crept	crept
4. dig	dug	dug
5. dream	dreamed (dreamt)	dreamed (dreamt)
6. feel	felt	felt
7. fight	fought	fought
8. find	found	found

Present	Past	Past Participle
9. flee	fled	fled
10. fling	flung	flung
11. hang (picture, object)	hung	hung
12. hang (a person)	hanged	hanged
13. have	had	had
14. hear	heard	heard
15. hold	held	held
16. keep	kept	kept
17. lay (to put/to place)	laid	laid
18. lead	led	led
19. leave	left	left
20. lend	lent	lent
21. lie (to tell an untruth)	lied	lied
22. say	said	said
23. shine (sun, moon)	shone	shone
24. shine (shoes)	shined	shined
25. sit	sat	sat
26. sting	stung	stung
27. swing	swung	swung
28. teach	taught	taught

Catagory #3 (all three forms of the verb are the same)

Present	Past	Past Participle
1. beat	beat	beat
2. burst	burst	burst
3. hurt	hurt	hurt
4. let	let	let
5. set	set	set

Catagory #4 (spelling change for each form)

Present	Past	Past Participle
1. arise	arose	arisen
2. bear	bore	borne
3. begin	began	begun
4. bite	bit	bitten

Catagory #4 (cont)

Present	Past	Past Participle
5. blow	blew	blown
6. break	broke	broken
7. choose	chose	chosen
8. dive	dove	dived
9. do	did	done
10. draw	drew	drawn
11. drink	drank	drunk
12. drive	drove	driven
13. eat	ate	eaten
14. fall	fell	fallen
15. fly	flew	flown
16. forget	forgot	forgotten
17. freeze	froze	frozen
18. get	got	gotten
19. give	gave	given
20. go	went	gone
21. grow	grew	grown
22. hide	hid	hidden
23. know	knew	known
24. lie (to rest/to recline)	lay	lain
25. ride	rode	ridden
26. ring	rang	rung
27. rise	rose	risen
28. see	saw	seen
29. shake	shook	shaken
30. show	showed	shown
31. shrink	shrank	shrunk
32. sing	sang	sung
33. sink	sank	sunk
34. speak	spoke	spoken
35. steal	stole	stolen
36. swear	swore	sworn
37. swim	swam	swum
38. take	took	taken
39. tear (to rip)	tore	torn
40. throw	threw	thrown
41. wake	woke	woken

Catagory #4 (cont)

	Present	Past	Past Participle
42.	wear	wore	worn
43.	write	wrote	written

Fill in the missing principal parts of the following verbs:

	Present	Past	Past Participle
1.		arose	
2.			borne
3.		beat	
4.	become		
5.			begun
6.		bit	
7.	blow		
8.		broke	
9.	bring		
10.		burst	
11.			caught
12.		chose	
13.	come		
14.	creep		
15.		dove	
16.			done
17.		drew	
18.	drink		
19.			driven
20.	eat		
21.		fell	
22.		felt	
23.	fight		
24.			found
25.		fled	
26.			flung

Fill in the missing principal parts of the following verbs. (cont)

Present	Past	Past Participle
27.		flown
28.	forgot	
29. freeze		
30.		gotten
31. give		
32. go		
33.	grew	
34. hang (picture/object)		
35. hang (a person)		
36.		had
37.	heard	
38.	hid	
39.		held
40. hurt		
41.		kept
42.	knew	
43. lay (to put or to place)		
44.	led	
45.		left
46.	lent	
47. let		
48. lie (to rest or to recline)		
49. lie (to tell an untruth)		
50.	last	
51.	rode	
52. ring		
53.		risen
54. run		
55. say		
56.	saw	
57.		set
58.		shaken
59. shine (sun, moon)		
60. shine (shoes)		
61.	showed	
62.		shrunk

Fill in the missing principal parts of the following verbs: (cont)

63.		sang	
64.			sunk
65.	sit		
66.		spoke	
67.	steal		
68.		stung	
69.	swear		
70.	swim		
71.		swung	
72.			taken
73.			taught
74.	tear (to rip)		
75.	throw		
76.		woke	
77.			worn
78.	write		

Pronouns

Introduction to Pronouns

Read the following sentence:

> **John** was happy because **John** found **John's** dog.

Does this sentence sound unusual or awkward? Did you notice that the word *John* was repeated three times?

Now compare:

> **John** was happy because **he** found **his** dog.

Does this sentence sound more natural? Did you notice that *John* and *John's* were replaced by *he* and *his* ?

Words like *he* and *his* are called **pronouns**. Pronouns take the place of nouns. When we talk or write, we don't like to repeat ourselves too much. Instead of repeating some nouns, we can use pronouns.

Pronouns work a lot like nouns in a sentence. A pronoun can be the subject of a sentence, just as a noun can. A pronoun can be the object of a verb, just like a noun.

But in many ways, pronouns are more complicated than nouns. There are many different kinds of pronouns, and some have several different forms. (*I* and *me* are really different forms of the same pronoun, for example.)

Exercises

In each of the sentences below, two words are underlined. One is a noun. The other is a pronoun. Write the pronoun in the space that follows the sentence.

Example: Philip scratched his head. his

1. Ramona hasn't finished her homework yet. ______
2. Lewis spoke to her yesterday. ______
3. Bill's dog bit him on the leg. ______
4. The principal wanted to know who was absent. ______
5. Anyone could have stolen the jewels. ______ (Be careful! This is tricky.)

Rosemary Grebel and Phyllis Pogrund, Basic English Grammar (New York: Educational Design, Inc., 1987), pp. 40-52.

Personal Pronouns - Subject Form

The pronouns he, her, they, and others that you worked with in the last lesson are called **personal pronouns**.

Personal pronouns have many forms. You use them all often when you talk. Pronouns have **number** - that is, they can be singular or plural, like nouns. They also are grouped according to what grammar calls **person**. Every personal pronoun is classed as either **first person, second person**, or **third person**. A look at the chart will show you what number and person mean:

	NUMBER	
	Singular	Plural
First Person	I	we
Second Person	you	you
Third Person	he she it	they

Look carefully at the chart until you understand it. Notice particularly that there are three third person singular pronouns.

The labels *first person, second person,* and *third person* may be new to you. But the personal pronouns that they describe are all ones you use every day.

The personal pronouns in the chart are the ones used as subjects of sentences. We call them **subject pronouns.** You cannot use any other forms of personal pronouns as the subject of a sentence:

WRONG: **Her** opened the door. (You are not likely to make this mistake.)

WRONG: Bill and **her** walked in. (You might make this mistake.)

You always must use the subject form of a personal pronoun as the subject of a sentence:

RIGHT: **She** opened the door.

RIGHT: Bill and **she** walked in.

EXERCISES

In each sentence below, underline the noun or nouns that make up the subject of the sentence. Then rewrite the sentences, changing each noun subject to a pronoun. Notice that a sentence may have two noun subjects that are replaced by one pronoun.

Examples: The chicken is delicious. **It is delicious.**

Mom and Dad like picnics. **They like picnics**.

1. The sky is blue today.

2. The Joneses are having fun.

3. A girl was looking around.

4. The man appeared to be smiling.

5. The scientists hope it won't rain.

In each of the following sentences, one or more subject pronouns has the wrong form. Write the correct forms in the blank after each sentence. Use the subject pronoun chart at the beginning of this chapter to help you.

Example: Him and me went to the store. **He, I**

6. Mom and me are cooking a turkey tonight. ____________________

7. Him and her had an argument. ____________________

8. Her and my mom are good friends. ____________________

9. Them and their friends are welcome to come. ____________________

10. Us two are the only ones who really understand. ____________________

Object Pronouns

In the last lesson, you worked with subject pronouns. Personal pronouns also have an object form. Pronouns with this form are called **object pronouns**. As you can guess, they are used in sentences as objects of verbs.

Here are the object forms of personal pronouns:

	Singular	Plural
First Person	me	us
Second Person	you	you
Third Person	him her it	them

Always use the object form of a pronoun as the object in a sentence:

Greg phoned **him.**

Essie phone **you** and **her**. (**not** you and she!)

Exercises

In each sentence below, substitute the correct object form of a pronoun for the underlined noun or nouns. Look at the chart above when you need to.

Examples: Take a piece. — Take **it.**
I got several letters. — I got **them**.

1. I went fishing with Max.
   I went fishing with _____.

2. A fish got the bait twice.
   A fish got _______twice.

3. Then we caught some boots.
   Then we caught ______ .

4. Later we caught a mermaid.
   Later we caught ______ .

5. She was undersized, so we threw the mermaid back.
   She was undersized, so we threw ____________ back.

6. A reporter didn't believe Max and me.
   The reporter didn't believe ________ .

7. Do you believe the story?
   Do you believe ________?

8. If you don't just ask Max.
   If you don't just ask ________ .

9. Or you can ask the mermaid.
   Or you can ask ________.

10. There's no point in asking the fishes.
    There's no point in asking ________ .

Possessive Pronouns

Like nouns, personal pronouns have possessive forms. In fact, each pronoun has two possessive forms. One form is used in front of a noun. The other is used by itself, in place of a noun:

	BEFORE NOUNS	
	Singular	Plural
First Person	my	our
Second Person	your	your
Third Person	his her its	their

	IN PLACE OF NOUNS	
	Singular	Plural
First Person	mine	ours
Second Person	yours	yours
Third Person	his her its	theirs

For example:

Your sweater is warmer than **my** jacket. (Form used before a noun)

Yours is warmer than **mine.** (Form used in place of a noun)

Notice one thing about the spelling of these possessive forms. The possessive forms of personal pronouns do not have apostrophes. If you see the spelling *it's* with an apostrophe, it's not a possessive. It's a contraction, short for *it is*. And the spelling *you're* means "you are" the spelling *they're* means "they are." None is a possessive. They are all contractions.

Exercises

Circle all the possessive pronouns in the conversation below.

1. "My house is bigger than your house," Jamie said.

2. "So what?" I said. "our car is newer than yours."

3. "Well," Jamie said, "You're not as fast a runner as either of my brothers. They're better swimmers, too. And their diving form is the best there is."

4. "OK, Jamie," I said. "The biggest and best dog in town is mine. Her bark is the loudest. If you see a huge footprint, it's hers. Why are we having this stupid conversation?"

5. "Don't make fun of my dog," said Jamie.

Reflexive and Intensive Pronouns

There is one last group of forms of the personal pronoun.

	Singular	Plural
First Person	myself	ourselves
Second Person	yourself	yourselves
Third Person	himself herself itself	themselves

This group of pronoun forms is used in two ways:

As Reflexive Pronouns. When a personal pronoun in a sentence refers back to the subject, it takes one of the forms listed above. Used this way, it's called a **reflexive pronoun**:

I cut **myself.**

They work by **themselves.**

As Intensive Pronouns. A personal pronoun in one of these forms sometimes comes after another noun or pronoun to add emphasis. Used this way, it's called an **intensive pronoun**:

Jim **himself** wrote the letter.

I **myself** am not sure about the plan.

An intensive pronoun can sometimes go somewhere else in the sentence:
Jim wrote the letter **himself.**

I am not sure about the plan **myself.**

Notice the following about these pronoun forms:
-In the singular, they have the ending *-self*. In the plural, however, they have the ending *-selves*.

-In the third person, the correct forms are *himself* and *themselves*, not "hisself" or "theirselves." It's true that logically, "hisself" is more like *myself* than the correct form, *himself*, is. But English isn't always a logical language. "Hisself" and "theirselves" are incorrect.

Exercises

Fill in the blanks of the following sentences with the correct reflexive pronoun.

Example: I can easily do it all by **myself**.

1. Alice likes to work by ______.
2. Our cat licks________.
3. We teach ____________many things.
4. He looked at ________in the mirror.
5. "Kids, wash ________ before lunch."

Fill in the blanks of the following sentences with the correct intensive pronoun.

6. They _________were responsible.
7. You__________noticed the problem.
8. Betty _________was unable to get the waiter's attention.
9. Fred spoke to Mr. Snyder ________ .
10. I'm eager ___________to try the plan.

In each of the following sentences, a pronoun is underlined. In the blank spaces after the sentences, write what each pronoun is. Write **R** if it is a reflexive pronoun and I if it is an intensive pronoun.

Example: I could hardly hear myself speak. **R**

11. Do you really like yourself? __________
12. I cannot imagine myself doing such a thing. _________
13. Brenda couldn't do the job herself. __________
14. We ourselves will fight for our country. _________
15. We will be fighting for ourselves. _________

Indefinite Pronouns

Is **everybody** ready? **Nobody** fall asleep, now.

Some of your aren't paying attention. I hope I'm not boring **anyone**.

The words in bold type above are examples of a kind of pronoun called an **indefinite pronoun**. Indefinite pronouns also include words like *all, each, any*, and *some*. And most words that begin with *every, any, some* and *no* are also indefinite pronouns. There are many others as well. The list below contains the most common ones. Look over the list carefully:

	Indefinite Pronouns
	all each either neither
The "Every" Group	everyone everybody everything
The "Any" Group	any anyone anybody anything
The "Some" Group	some someone somebody something
The "Other" Group	others another
The "No" Group no one	none nobody nothing
The "How Many" Group	one both few several less many much more most plenty enough

Indefinite pronouns are not used before nouns. So if we say "*all men*" or "*any food*," for example, all and any are not pronouns. They describe nouns. They don't take the place of nouns. (They are adjectives).

Exercises

Write in the correct indefinite pronouns to complete these sentences. Use the pronoun box. Use each pronoun only once. Check it off as you use it.

Examples: Do you have candy? I'd like **some**.

PRONOUN BOX

all
✓ some
both
someone
anyone
either
anywhere
everybody

1. Is ______ home? __________ must be here.
2. ________ you and Trini said you'd visit Ella.
3. I'll go with ________ you and your sister.
4. He's sick. He doesn't want to go _______ .
5. Twenty people are invited, and they're ________ able to come.
   __________ will be there.

Demonstrative Pronouns

"**That** is my book."
The blue one?"
"No, **this**; **that** I just picked up."

This and that, and the plural forms these and those, are called **demonstrative pronouns** when they are used in place of a noun. They "point something out" - which is the original meaning of the word demonstrate.

This and these are used to point out things that are nearby.

That and those are used to point out things that are farther away.

So there are only four demonstrative pronouns:

	Singular	Plural
Nearby	this	these
Farther Away	that	those

(Just like indefinite pronouns, demonstrative pronouns are not used before nouns. So if we say these books, we aren't using these as a pronoun.)

Exercises
Complete each sentence below with a demonstrative pronoun and the correct form of the verb *be*. Choose for yourself whether you prefer to use a form of *this* or of *that* in the sentence.

Example: **That** **is** a beautiful.

1. _____ _______ gold here in my hand.
2. ______ ______ her new shirts.
3. ______ ______ new pens here on the desk.
4. ______ ______ her desk over there.
5. ______ ______ the elephants on the other side of the zoo.

Interrogative Pronouns

Who is the tallest person in the room?

Which of the video games did you play?

What is your name?

As you can see, the words in bold type above are used to form questions. They are called **interrogative pronouns**, from the word interrogate, which means "to ask a question." The three basic interrogative pronouns are the ones given above: *who, which*, and *what*.

Who has two other forms:

Whose

Whom

Whose is used to ask questions to find out possession.

Whom is the object form of who. *Whom* is not always used in speech, but is common in writing.

Compounds with the ending *-ever, like whoever, whomever, whichever*, or *whatever* are also forms of interrogative pronouns.

Here is the complete list of interrogative pronouns:

	Basic Form	**With-ever Ending**
Subject Form	who	whoever
Object Form	whom	whomever
Possessive Form	whose	No Standard Form
	which	whichever
	what	whatever

Like indefinites and demonstratives, the interrogatives are not pronouns when they are put before a noun. So if we say, "Whose books are these?" then *whose* is not being used as a pronoun.

Exercises

Circle the interrogative pronouns in this conversation. The first one has been done for you as an example.

Clerk: Good afternoon, sir. What may I do for you?

Shopper: I'd like to buy a ring.

Clerk: Certainly. Who is it for?

Shopper: A friend.

Clerk: What is the occasion?

Shopper: It's for a birthday.

Clerk: What would you like? Maybe a birthstone ring?

Shopper: That's a good idea. Which are the birthstone rings?

Clerk: All these. What is your friend's birth month?

Shopper: What are the prices? Er, which are the cheap ones?

Clerk: Whatever do you mean, "cheap ones" There are no cheap ones.

Shopper: Which of the discount jewelry stores is this?

Clerk: I beg your pardon! This is Snooty Jewelry Store! Whoever told you we gave discounts?

Pronoun Antecedents and Agreement

Pronouns take the place of nouns. Often, the noun that the pronoun replaces or refers to is found earlier in the sentence. Sometimes it is in the sentence before. For example:

The director always talked with the **actors** before photographing **them**.

Jenny looked away. **She** didn't want to speak.

The word that a pronoun replaces or refers to is called the pronoun's **antecedent**. (The word *antecedent* comes from two Latin words meaning "before" and "coming." An antecedent "comes before" the pronoun that refers to it.)

The antecedent of a pronoun may be another pronoun. It can, for example, be an indefinite pronoun:

"I expect **everyone** to do **her** best," said the dance instructor.

Not all pronouns have antecedents. Indefinite pronouns often do not. Neither does the personal pronoun *I*. *We* and *you* often don't have antecedents as well:

Duke Otto gave **everyone** a big smile. (No antecedent)

I was not fooled, however. (No antecedent)

A pronoun is expected to **agree** with its antecedent. This means, for example, that if the antecedent is singular, the pronoun must be singular too. If the antecedent is plural, the pronoun must be plural also. If the antecedent is female, a personal pronoun referring to it must be female as well. And so on:

Bert scratched **his** head thoughtfully.

In the example, *Bert* is singular and male. So is the pronoun *his* that refers to Bert.

Exercises

Write the antecedent of each underlined pronoun, if any, in the blank space after each sentence. If the pronoun has no antecedent, write the words "no antecedent."

Examples: I raised my hand. *I*

Everyone laughed. **no antecedent**

1. Who delivered the mail yesterday? ____________
2. Vince looked around. He didn't see anything. ______________
3. The dog wagged its tail eagerly. ______________
4. Bill wondered if anyone would telephone him. ____________
5. This broccoli looks great. I'd like some. ________________

Review

1. Circle all the pronouns you can find in the story below. To help you, the number of pronouns in each paragraph is put in parentheses.

a. "Hi," Anna said, "Can you come to my party on Saturday?" (2)

b. "Who will be there? Anyone I know?" asked Henry. (3)

c. "All of your friends will be there, and everyone who is anyone in this town, too," she replied. (6)

d. "Will it be at your house, or whose? This sounds like a party I *don't* want to miss." (5)

e. "Well," Anna answered slowly, "I am not sure. Can it be at *your* house? It can't be at mine." (5)

f. Henry was surprised. "My place is too small for everyone you have invited. Do you mean you have nowhere to have this?" (6)

g. "How about your friends' places? Will you ask them for me?" Anna continued. (4)

h. "You'll have to ask them yourself." Henry said. "Tell me, how can you invite all of us, when there is nowhere for us to go?" (8)

i. "Who doesn't like a party? Everyone I asked wants to go, so I just invited them all." Anna said simply. (6)

j. "Anyone who would plan a party without a place to have it and invite everybody, will either lose all of her friends or have a great street party! I guess it could be fun. But, thanks, I'm busy on Saturday." Henry walked away shaking his head. (9)

In the following sentences, draw an arrow from each pronoun to its antecedent:

2. Jamie took his picture off its hook on the wall.

3. Leroy told his mother that she wasn't being fair to him.

In the following sentences, there are several pronouns that have the wrong form. After each sentence, write the correct form of each incorrect pronoun. (If a pronoun form is correct, you don't have to write it.)

4. The tree's branches shaded Fred and I from the rain. ______________

5. Me and my friends are going out now. ______________

Chapter 1 Mechanics

GED Spelling List

Master List of Frequently Misspelled Words

The words below are often found on standardized tests. Letters that people often misspell are underlined for you. Use these steps to study the list.

1. Pretest—Ask someone to read each word to you and use the word in a sentence. Write each word on your paper. Then check to see if you've spelled the words correctly. Put an X in the box if you spelled the word correctly.
2. Study List—Make a list of the words you misspelled. Study 10-12 at a time. Underline the letters you have trouble spelling. Practice writing the words.
3. Post-Test—Have someone read to you each list of 10-12 words that you studied. Write the words again and check your work.

a lot ☐
ability ☐
absence ☐
absent ☐
abundance ☐
accept ☐
acceptable ☐
accident ☐
accommodate ☐
accompanied ☐
accomplish ☐
accumulation ☐
accuse ☐
accustomed ☐
ache ☐
achieve ☐
achievement ☐
acknowledge ☐
acquaintance ☐
acquainted ☐
acquire ☐
address ☐
addressed ☐
adequate ☐
advantageous ☐
advantage ☐
advertise ☐
advertisement ☐
advice ☐
advisable ☐
advise ☐
advisor ☐
aerial ☐
affect ☐
affectionate ☐

again ☐
against ☐
aggravate ☐
aggressive ☐
agree ☐
aisle ☐
all right ☐
almost ☐
already ☐
although ☐
altogether ☐
always ☐
amateur ☐
American ☐
among ☐
amount ☐
analysis ☐
analyze ☐
angel ☐
angle ☐
annual ☐
another ☐
answer ☐
antiseptic ☐
anxious ☐
apologize ☐
apparatus ☐
apparent ☐
appear ☐
appearance ☐
appetite ☐
apply ☐
appreciate ☐
appreciation ☐
approach ☐

appropriate ☐
approval ☐
approve ☐
approximate ☐
argue ☐
arguing ☐
argument ☐
arouse ☐
arrange ☐
arrangement ☐
article ☐
artificial ☐
ascend ☐
assistance ☐
assistant ☐
associate ☐
association ☐
attempt ☐
attendance ☐
attention ☐
audience ☐
August ☐
author ☐
automobile ☐
autumn ☐
auxiliary ☐
available ☐
avenue ☐
awful ☐
awkward ☐

bachelor ☐
balance ☐
balloon ☐
bargain ☐

basic ☐
beautiful ☐
because ☐
become ☐
before ☐
beginning ☐
being ☐
believe ☐
benefit ☐
benefited ☐
between ☐
bicycle ☐
board ☐
bored ☐
borrow ☐
bottle ☐
bottom ☐
boundary ☐
brake ☐
breadth ☐
breath ☐
breathe ☐
brilliant ☐
building ☐
bulletin ☐
bureau ☐
burial ☐
buried ☐
bury ☐
bushes ☐
business ☐

cafeteria ☐
calculator ☐
calendar ☐

Donna D. Amstutz, Writing Skills, Part One: Conventions of English (Texas: National Education Corporation, 1990), pp. 10-13.

- campaign ☐
- capital ☐
- capitol ☐
- captain ☐
- career ☐
- careful ☐
- careless ☐
- carriage ☐
- carrying ☐
- category ☐
- ceiling ☐
- cemetery ☐
- cereal ☐
- certain ☐
- changeable ☐
- characteristic ☐
- charity ☐
- chief ☐
- choose ☐
- chose ☐
- cigarette ☐
- circumstance ☐
- citizen ☐
- clothes ☐
- clothing ☐
- coarse ☐
- coffee ☐
- collect ☐
- college ☐
- column ☐
- comedy ☐
- comfortable ☐
- commitment ☐
- committed ☐
- committee ☐
- communicate ☐
- company ☐
- comparative ☐
- compel ☐
- competent ☐
- competition ☐
- compliment ☐
- conceal ☐
- conceit ☐
- conceivable ☐
- conceive ☐
- concentration ☐
- conception ☐
- condition ☐
- conference ☐
- confident ☐
- congratulate ☐
- conquer ☐
- conscience ☐
- conscientious ☐
- conscious ☐
- consequence ☐
- consequently ☐
- considerable ☐
- consistency ☐
- consistent ☐
- continual ☐
- continuous ☐
- controlled ☐
- controversy ☐
- convenience ☐
- convenient ☐
- conversation ☐
- corporal ☐
- corroborate ☐
- council ☐
- counsel ☐
- counselor ☐
- courage ☐
- courageous ☐
- course ☐
- courteous ☐
- courtesy ☐
- criticism ☐
- criticize ☐
- crystal ☐
- curiosity ☐
- cylinder ☐

- daily ☐
- daughter ☐
- daybreak ☐
- death ☐
- deceive ☐
- December ☐
- deception ☐
- decide ☐
- decision ☐
- decisive ☐
- deed ☐
- definite ☐
- delicious ☐
- dependent ☐
- deposit ☐
- derelict ☐
- descend ☐
- descent ☐
- describe ☐
- description ☐
- desert ☐
- desirable ☐
- despair ☐
- desperate ☐
- dessert ☐
- destruction ☐
- determine ☐
- develop ☐
- development ☐
- device ☐
- dictator ☐
- died ☐
- difference ☐
- different ☐
- dilemma ☐
- dinner ☐
- direction ☐
- disappear ☐
- disappoint ☐
- disappointment ☐
- disapproval ☐
- disapprove ☐
- disastrous ☐
- discipline ☐
- discover ☐
- discriminate ☐
- disease ☐
- dissatisfied ☐
- dissection ☐
- dissipate ☐
- distance ☐
- distinction ☐
- division ☐
- doctor ☐
- dollar ☐
- doubt ☐
- dozen ☐

- earnest ☐
- easy ☐
- ecstasy ☐
- ecstatic ☐
- education ☐
- effect ☐
- efficiency ☐
- efficient ☐
- eight ☐
- either ☐
- eligibility ☐
- eligible ☐
- eliminate ☐
- embarrass ☐
- embarrassment ☐
- emergency ☐
- emphasis ☐
- emphasize ☐
- enclosure ☐
- encouraging ☐
- endeavor ☐
- engineer ☐
- English ☐
- enormous ☐
- enough ☐
- entrance ☐
- envelope ☐
- environment ☐
- equipment ☐
- equipped ☐
- especially ☐
- essential ☐
- evening ☐
- evident ☐
- exaggerate ☐
- exaggeration ☐
- examine ☐
- exceed ☐
- excellent ☐
- except ☐
- exceptional ☐
- exercise ☐
- exhausted ☐
- exhaustion ☐
- exhilaration ☐
- existence ☐
- exorbitant ☐
- expense ☐
- experience ☐
- experiment ☐
- explanation ☐
- extreme ☐

- facility ☐
- factory ☐
- familiar ☐
- fascinate ☐
- fascinating ☐
- fatigue ☐
- February ☐
- financial ☐
- financier ☐
- flourish ☐
- forcibly ☐
- forehead ☐
- foreign ☐
- formal ☐
- former ☐
- fortunate ☐
- fourteen ☐
- fourth ☐
- frequent ☐
- friend ☐
- frightening ☐
- fundamental ☐
- further ☐

- gallon ☐
- garden ☐
- gardener ☐
- general ☐
- genius ☐
- government ☐
- governor ☐
- grammar ☐
- grateful ☐
- great ☐
- grievance ☐
- grievous ☐

grocery ☐
guarantee ☐
guard ☐
guess ☐
guidance ☐

half ☐
hammer ☐
handkerchief ☐
happiness ☐
healthy ☐
heard ☐
heavy ☐
height ☐
heroes ☐
heroine ☐
hideous ☐
himself ☐
hoarse ☐
holiday ☐
hopeless ☐
hospital ☐
humorous ☐
hurried ☐
hurrying ☐

ignorance ☐
imaginary ☐
imbecile ☐
imitation ☐
immediately ☐
immigrant ☐
incidental ☐
increase ☐
independence ☐
independent ☐
indispensable ☐
inevitable ☐
influence ☐
influential ☐
initiate ☐
innocence ☐
inoculate ☐
inquiry ☐
insistent ☐
instead ☐
instinct ☐
integrity ☐
intellectual ☐
intelligence ☐
intercede ☐
interest ☐
interfere ☐
interference ☐
interpreted ☐
interrupt ☐
invitation ☐
irrelevant ☐

irresistible ☐
irritable ☐
island ☐
its ☐
it's ☐
itself ☐

January ☐
jealous ☐
judgment ☐
journal ☐

kindergarten ☐
kitchen ☐
knew ☐
knock ☐
know ☐
knowledge ☐

labor ☐
laboratory ☐
laid ☐
language ☐
later ☐
latter ☐
laugh ☐
leisure ☐
length ☐
lesson ☐
library ☐
license ☐
light ☐
lightning ☐
likelihood ☐
likely ☐
literal ☐
literature ☐
livelihood ☐
loaf ☐
loneliness ☐
loose ☐
lose ☐
losing ☐
loyal ☐
loyalty ☐

magazine ☐
maintenance ☐
maneuver ☐
marriage ☐
married ☐
marry ☐
match ☐
material ☐
mathematics ☐
measure ☐
medicine ☐
million ☐

miniature ☐
minimum ☐
miracle ☐
miscellaneous ☐
mischief ☐
mischievous ☐
misspelled ☐
mistake ☐
momentous ☐
monkey ☐
monotonous ☐
moral ☐
morale ☐
mortgage ☐
mountain ☐
mournful ☐
muscle ☐
mysterious ☐
mystery ☐

narrative ☐
natural ☐
necessary ☐
needle ☐
negligence ☐
neighbor ☐
neither ☐
newspaper ☐
newsstand ☐
niece ☐
noticeable ☐

o'clock ☐
obedient ☐
obstacle ☐
occasion ☐
occasional ☐
occur ☐
occurred ☐
occurrence ☐
ocean ☐
offer ☐
often ☐
omission ☐
omit ☐
once ☐
operate ☐
opinion ☐
opportune ☐
opportunity ☐
optimist ☐
optimistic ☐
origin ☐
original ☐
oscillate ☐
ought ☐
ounce ☐
overcoat ☐

paid ☐
pamphlet ☐
panicky ☐
parallel ☐
parallelism ☐
particular ☐
partner ☐
pastime ☐
patience ☐
peace ☐
peaceable ☐
pear ☐
peculiar ☐
pencil ☐
people ☐
perceive ☐
perception ☐
perfect ☐
perform ☐
performance ☐
perhaps ☐
period ☐
permanence ☐
permanent ☐
perpendicular ☐
perseverance ☐
persevere ☐
persistent ☐
persuade ☐
personality ☐
personal ☐
personnel ☐
persuade ☐
persuasion ☐
pertain ☐
picture ☐
piece ☐
plain ☐
playwright ☐
pleasant ☐
please ☐
pleasure ☐
pocket ☐
poison ☐
policeman ☐
political ☐
population ☐
portrayal ☐
positive ☐
possess ☐
possession ☐
possessive ☐
possible ☐
post office ☐
potatoes ☐
practical ☐
prairie ☐
precede ☐

preceding ☐
precise ☐
predictable ☐
prefer ☐
preference ☐
preferential ☐
preferred ☐
prejudice ☐
preparation ☐
prepare ☐
prescription ☐
presence ☐
president ☐
prevalent ☐
primitive ☐
principal ☐
principle ☐
privilege ☐
probably ☐
procedure ☐
proceed ☐
produce ☐
professional ☐
professor ☐
profitable ☐
prominent ☐
promise ☐
pronounce ☐
pronunciation ☐
propeller ☐
prophet ☐
prospect ☐
psychology ☐
pursue ☐
pursuit ☐

quality ☐
quantity ☐
quarreling ☐
quart ☐
quarter ☐
quiet ☐
quite ☐

raise ☐
realistic ☐
realize ☐
reason ☐
rebellion ☐
recede ☐
receipt ☐
receive ☐
recipe ☐
recognize ☐
recommend ☐
recuperate ☐
referred ☐
rehearsal ☐
reign ☐
relevant ☐
relieve ☐
remedy ☐
renovate ☐
repeat ☐
repetition ☐
representative ☐
requirements ☐
resemblance ☐
resistance ☐
resource ☐
respectability ☐
responsibility ☐
restaurant ☐
rhythm ☐
rhythmical ☐
ridiculous ☐
right ☐
role ☐
roll ☐
roommate ☐

sandwich ☐
Saturday ☐
scarcely ☐
scene ☐
schedule ☐
science ☐
scientific ☐
scissors ☐
season ☐
secretary ☐
seize ☐
seminar ☐
sense ☐
separate ☐
service ☐
several ☐
severely ☐
shepherd ☐
sheriff ☐
shining ☐
shoulder ☐
shriek ☐
siege ☐
sight ☐
signal ☐
significance ☐
significant ☐
similar ☐
similarity ☐
sincerely ☐
site ☐
soldier ☐
solemn ☐
sophomore ☐
soul ☐
source ☐
souvenir ☐
special ☐
specified ☐
specimen ☐
speech ☐
stationary ☐
stationery ☐
statue ☐
stockings ☐
stomach ☐
straight ☐
strength ☐
strenuous ☐
stretch ☐
striking ☐
studying ☐
substantial ☐
succeed ☐
successful ☐
sudden ☐
superintendent ☐
suppress ☐
surely ☐
surprise ☐
suspense ☐
sweat ☐
sweet ☐
syllable ☐
symmetrical ☐
sympathy ☐
synonym ☐

technical ☐
telegram ☐
telephone ☐
temperament ☐
temperature ☐
tenant ☐
tendency ☐
tenement ☐
therefore ☐
thorough ☐
through ☐
title ☐
together ☐
tomorrow ☐
tongue ☐
toward ☐
tragedy ☐
transferred ☐
treasury ☐
tremendous ☐
tries ☐
truly ☐
twelfth ☐
twelve ☐
tyranny ☐

undoubtedly ☐
United States ☐
university ☐
unnecessary ☐
unusual ☐
useful ☐
usual ☐

vacuum ☐
valley ☐
valuable ☐
variety ☐
vegetable ☐
vein ☐
vengeance ☐
versatile ☐
vicinity ☐
vicious ☐
view ☐
village ☐
villain ☐
visitor ☐
voice ☐
volume ☐

waist ☐
weak ☐
wear ☐
weather ☐
Wednesday ☐
week ☐
weigh ☐
weird ☐
whether ☐
which ☐
while ☐
whole ☐
wholly ☐
whose ☐
wretched ☐

WRITING

Writing can mean more than the spoken word. When you write, you tell more than simple facts. You can analyze. You communicate feelings, a mood. You can suggest layers of meaning. Writing can set you off in a new direction, or bring a new understanding to some problem in your life. Writing makes you think.

DISTINGUISHING OPINION FROM FACT

A simile compares two things by using the words **like** or **as**. For example, **The spring wind is as strong as a lion.**

A metaphor also compares two things does not use the words **like** or **as**. A metaphor implies that one thing is another. For example, **Spring is a roaring lion.**

Read each comparison below and label it **M** for metaphor or **S** for simile. Then write another comparison about the same subject.

1. The moon is a watchful caretaker of the sky.

2. The new student was as eager as a puppy.

3. The airplane was a loose feather in a down cloud pillow.

4. That truck is a grunting hog.

5. The buses lumbered down the avenue like a herd of sleepy elephants.

6. Arthur was a dragon belching fire until we calmed him down.

7. The water was as smooth as polished glass.

8. His head reared back like that of a horse.

Don Barnes et al. Critical Thinking For Adults (Austin: Steck-Vaughn Company, 1987), pp. 54-73.

GIVING DEFINITIONS AND EXAMPLES

Words may be defined in a variety of ways. A definition may include synonyms (other words which mean about the same). Sometimes it is easier to define a word by giving examples (names of objects which belong to that group or category). A word may also be defined by contrasting it with an antonym (a word which is opposite in meaning).

Label each definition below as **S** for synonym, **E** for example, or **A** for antonym. Study the examples below.

S gentle: mild, smooth, soft

E gentle: a mother's tender touch

A gentle: not rough or harsh

1. fruit: tangerines, apples, and oranges
2. fluid: water, mercury, and gasoline
3. solid: not a liquid or a gas
4. gazette: newspaper, journal
5. annoy: make angry, disturbing, trouble
6. fabric: velvet, canvas, and linen
7. uneasy: not comfortable; not easy in manner
8. righteous: opposed to wrong
9. irksome: tiresome; tedious
10. feline: lions, tigers, leopards, and panthers
11. bare: without covering; not clothed
12. bind: tie together, hold together, fasten
13. narrow: not wide, having little width
14. taint: stain or spot; trace of decay, corruption, disgrace
15. percussion: musical instruments such as drums or cymbals

IDENTIFYING MAIN IDEAS

A good paragraph is built around a main idea. Often, this main idea is stated in a topic sentence. At other times, there is no topic sentence, though the facts in the paragraph are still clustered around a main idea.

A. Read each paragraph below. If the paragraph has a topic sentence, underline that sentence.

1. Water has many unusual properties. For example, a skin forms where water meets air. Tiny water droplets squeeze together and move upward through stems and leaves. Water also floats when it is frozen, because frozen water has expanded and become less dense.

2. Our hero of the First World War was a pigeon that carried an important message through artillery fire. During the Second World

War, the British dropped boxes of homing pigeons behind enemy lines. Pigeons were also used to carry messages during the Korean War.

3. The camel is well-equipped for desert travel. Its long eyelashes help keep the blowing sand out of its eyes. A camel can travel for several days without water. Thick pads protect its hoofs from the hot sand.

4. A hippopotamus can run on the bottom of a lake or river at eight miles an hour. On land, it can run fast as a human. This large animal is a fast swimmer and can dive, sink like a rock, or float like a log.

5. Though insects are small, many of them can cause great damage. Some insects can destroy crops. Others can cause various illnesses in people and in other animals.

B. A good title states the main idea briefly and in an interesting way. Write a title for each paragraph above.

1.

2.

3.

4.

5.

IDENTIFYING MAIN IDEAS

Read each group of sentences below. Decide which sentence seems unrelated to the others and draw a line through it. Then think of a main-idea, or topic, sentence that could be used to introduce the remaining three sentences. Write a paragraph, using your topic sentence and following it with the three related sentences.

A. 1. Native Americans could tell direction in the forest by examining where moss grew.
2. Broken branches and twigs were clues to the paths taken by forest animals.
3. Native Americans told a variety of myths and legends.
4. Keen ears could pick up the special sounds made by different birds and mammals.

B. 1. The investigations of scientists have led to the cures for many diseases.
2. Scientists hold conventions frequently.
3. A scientist's patient investigations can also unfold important facts about the earth and about the universe.
4. The results of any investigation lead to new and fascinating questions which may be answered by further study.

OUTLINING AND SUMMARIZING

A **summary** is a statement that briefly gives the main idea of a longer selection.

A. Read the paragraph and the three summaries that follow it. Underline the summary that best explains the main idea of the articles. Then explain why you chose that particular summary.

> Cattle raisers use brands to mark their cattle. Cattle can roam a long way. They can get mixed with cattle from another ranch. The custom of marking calves with the owner's brand is common. Cowhands rope and brand the calves. Then the calves return to their mothers.

Summary 1. Branding cattle is not a very kind way to treat animals.
Summary 2. Ranchers brand cattle so that they will not lose the animals.
Summary 3: Many kinds of brands are used by ranchers. These brands help to find lost calves.

B. Read the paragraph below. Then write a summary of it.

Cellulose is the woody part of plants that gives them stiffness. Without cellulose, people would be without thousands of articles they use every day. Cotton fibers, linen cloth, coco matting, and manila rope are largely cellulose. Wood, too, is mostly cellulose, as is the paper that is made from wood. Cellulose is also used in the manufacture of certain plastics.

OUTLINING AND SUMMARIZING

An outline helps you organize and remember the main idea and the details that support the main idea.

A. Read the two paragraphs below. The main ideas for each is given. Fill in the details that support each main idea.

The Confrontation

Detective Yoshi gasped in disbelief as he entered the room. Every drawer in the desk was overturned; the contents lay all over the floor. The lamps from each table were smashed, and the tables were upended. Each cushion on the couch was slashed; the insides had been yanked out. The closet door was off its hinges; and shirts, socks, sweaters hung from the shelves and lay in heaps on the floor. Even the wastebaskets had been dumped and searched.

Detective Yoshi tiptoed to the window and peered out into the street below. There in the darkness, a limousine waited, its motor running. Inside, two burly men were talking quietly. A large box was between them. As the town clock sounded, the men leaned back and looked toward the window. The detective quietly stepped back.

I. A ransacked room

A.

B.

C.

D.

E.

F.

II. A waiting limousine

A.

B.

B. Plan an ending to the story. What would happen if the men and the detective had a confrontation? Use another sheet of paper to outline your thoughts.

OUTLINING AND SUMMARIZING

Main headings for five outlines are given in the box below. Match the subtopics of each outline with the correct main heading. Write the correct main heading above the outline. Then choose one of the four outlines without number subtopics. Rewrite the outline adding number subtopics of your own.

I. Contrasting sizes
II. Cause-effect
III. Subject matter
IV. Chronological order
V. Related characteristics

____

A. Both blue
B. Each long and wide
C. Both smooth
D. Neither easily transported

____

A. Tall and thin
B. Short and thin
C. Tall and plump
D. Short and plump

____

A. Mosquitoes
    1. Yellow fever
    2. Malaria
B. Bacteria
    1. Mold
    2. Illness
C. Cold weather
    1. Frozen pipes
    2. Withered flowers
D. Hunger
    1. Pain
    2. Weakness

____

A. Childhood
B. Teenage
C. Young adult
D. Middle years

____

A. In arithmetic
B. For social studies
C. As a part of science
D. In relation to health

OUTLINING AND SUMMARIZING

A **summary** is a brief restatement of the main points of a paragraph or article.

Read the article. Then write a summary.

> It is thought that the first roller skater was a man named Joseph Merlin, who tried out his invention in the 1760s. Merlin wore his skates to a fancy costume party in London. His idea was to skate around the room while playing the violin. Unfortunately, the only hit he made that evening occurred when he crashed into a mirror on his skates!
>
> Roller skates were not heard of again until 1790, when a Frenchman reintroduced them. Then, in 1818, skates were used in a ballet in Germany. After that, roller skates became popular in various stage productions. By 1860, they were a fad in many European cities. A North American, James Leonard Plumpton, made skates popular in the United States about this time.

OUTLINING AND SUMMARIZING

Read the paragraph about salmon. Then read the main topic and the list of details. Some of the details in the list are not included in the paragraph. Write these details under **Details Not In Paragraph.** Then find the details in the paragraph that are not included in the list. Write these details under **Details Not In List.**

Getting salmon ready for the market is a process with many steps. Salmon are caught in large nets and are later unloaded into fishing boats. The boats bring the fish to canneries, where fish heads, fins, and tails are removed. Afterward, the fish are cut into large pieces and washed thoroughly. The pieces are put into cans, and the cans are partially sealed. The cans are placed in a cooker where the salmon are steamed. The cans are then sealed and labels are pasted on. The cans are packed into large wooden boxes and shipped to various markets worldwide.

Main Topic:

getting salmon from fishing grounds to markets

Details:

caught in nets
troubles among fishermen
brought to canneries
heads, fins, and tails removed
X-rayed for disease
cut into pieces
cans sterilized
put into cans
partially sealed
cans sealed
labels put on
cans coded
placed on trucks and trains
reach your table

Details Not In Paragraph

Details Not In List

MAKING INFERENCES

To **infer** means to each a conclusion based on what you observe or the facts you have at hand.

Study the picture of the house. Examine the details carefully. Then write a paragraph to tell what you **infer** about the house. For example, do you infer that the house is empty or occupied? Do you infer that people in the neighborhood like or dislike this particular house? For each inference that you make, give at least one picture-detail that has led you to that inference.

MAKING INFERENCES

Many times, an inference is correct. You have enough facts at hand to lead you logically to the correct conclusion. At other times, however, an inference may not be correct. As you gather additional information, your inference may change. You may come to a different conclusion.

Here are some facts that may lead you to change your inference about the house you studied.

-The owner, Mr. M., is old and ill.
-Mr. M.'s wife and other close relatives died sometime ago.
-Mr. M. is extremely shy.
-Mr. M. has very little money.

1. On the basis of the facts above, write a few sentences which explain the condition of the house.

2. On the basis of the facts above, what would you infer about the kinds of things that Mr. M. needs most?

3. In many cases, it is important to check further to make sure an inference is correct. How would you check to see whether the inference you made in number 2 is correct?

JUDGING SENTENCE SEQUENCE

A story is **logical** if it is told in an order that makes sense. Usually this order relates to time. The author begins with what happened first and ends with what happened last.

A. The outline below is not written in the correct time sequence. Rewrite the outline on the blank lines so that the sequence is correct.

Charles Dodgson

II. Later life

- A. Wrote *Alice in Wonderland*
- B. Died in 1898
- C. Took the pen name Lewis Carroll

I. Early life

- A. Teacher of mathematics
- B. Born in 1832

Charles Dodgson

I. Early Life

B. Use your rewritten outline to write a short paragraph about the life of Charles Dodgson. Keep the facts in the correct sequence.

RECOGNIZING RELEVANCE AND IRRELVANCE

A. Suppose that your family has just rented a house in a new neighborhood. What information would be **relevant** - that is, important - to help you settle in comfortably? Rate the information below from 1 to 7, using the number 1 for the most relevant, and the number 7 for the least relevant.

_____ a list of the names of the police officers who patrol your area
_____ the names of the people who live in nearby apartments
_____ a crosstown bus schedule
_____ the location of the nearest attorney's office
_____ the telephone number of the nearest police station
_____ the person to call about garbage collection
_____ the name of the person who is responsible for the house in which you live

B. Again, suppose that you are living in a new town. Think of something not listed in part A that would be very relevant to your happiness in your new home. Write a paragraph about what you would need.

RECOGNIZING FALLACIES

In the fallacy of "guilt-by-association," a person is assumed to have done something wrong, because he or she is seen in a suspicious situation. In fact, the person might not be guilty of any wrongdoing at all.

A. Place a check mark before the situations below in which a person might be considered guilty by association.

1. Your friend is seen walking beside a person who has just escaped from prison.
2. Two young people have borrowed their parents' car.
3. You are seen entering the courthouse with a police officer.
4. A girl is visiting her cousin, who lives in Canada.
5. A man is seen forcing open a door with a screwdriver.

B. Suppose that for each situation you checked in part A, the person is **not** guilty of any wrongdoing. Write possible explanations for each person's behavior.

DISTINGUISHING OPINION FROM FACT

Read the news article. Then write a letter stating your opinion to the editor of the newspaper.

Pets Versus People

Park rangers caused an uproar today when they tried to uphold a new city law regarding pets. According to the law, no pets are allowed in the western section of Pen Park. This includes the playground area, the flower gardens, the food stands, and all the pedestrian paths on that side of the park. In trying to uphold the law, the rangers ran into much resistance in the form of angry dog walkers who did not know about her law or did not feel obliged to observe it.

Although pets are allowed in the eastern end of the park, many animal lovers are outraged that their pets are now barred from the rest of the park. "This is city land, paid for by city taxes, " said one irate poodle owner. "I'm a taxpayer, and my dog has as much right to be here as I do!"

Most offenders were given tickets, but few said they planned to pay them. As one ranger put it, "We're just doing our jobs. The city voted to keep part of the park free of animals so that people who do not like animals or are allergic to them could enjoy this place, too. We mean to see that this law is upheld."

Dear Editor:

IDENTIFYING RELATIONSHIPS

Suppose that you are asked to do the photo research for a book about buildings in our country. Your job is to find photographs that relate to quotations of famous people.

A. Identify the photo below that is best related to the quotation in the box. Below the photographs, tell why you made your selection.

> America has never forgotten and will never
> forget the nobler things that brought her
> into being and that light her path.
> -Bernard Baruch

B. Name three other buildings or structures whose photographs might be used to illustrate the quotation.

1.

2.

3.

DEVELOPING CRITERIA

A. Complete each list below by writing three criteria you use for judging the person or thing.

1. A person is a good friend if he or she

   a.
   b.
   c.

2. A school is a good school if it

a.

b.

c.

3. A successful person is someone who

a.

b.

c.

B. Study your responses to part A. Then complete the exercises below.

1. Do you expect that your lists will be exactly like those of your classmates?

2. Tell why or why not.

JUDGING ACCURACY

In your reading and listening, you sometimes come upon statements that your own experience and common sense tell you are not accurate. These statements may take the form of opinions, invalid generalizations, or simple lack of knowledge.

A. Read the following paragraph. Underline the obvious errors.

An ancient member of the cat family, the saber-toothed tiger was almost as large as a dinosaur. The name "saber-toothed" describes this giant cat's front teeth, which were short and sharp like the teeth of a saw. With its short, muscular legs and powerful shoulders and neck, the saber-toothed tiger was built for strength and speed. It was able to overtake its prey quickly, then leap upon the victim. Certainly the saber-toothed tiger was the most dangerous of all prehistoric animals! This particular cat originated in Asia and then spread through Europe, Africa, and North and South America. Today, explorers of forests and jungles are constantly on the lookout for this wild and dangerous beast.

B. Rewrite the paragraph above to make it factually correct. Retain the parts that are already free of error. You may wish to consult reference books to make sure your own paragraph is accurate.

MAKING DECISIONS

The same event can be judged in several different ways, depending on who is doing the judging and what the criteria are.

Each statement below tells about a storm. After you read each statement, decide which person listed in the box probably said it. Then write the criteria that person probably used.

meteorologist   young child   artist   homeowner

1. The storm has taken on a most unusual course.

2. The storm is terribly destructive.

3. The storm is beautiful.

4. The storm is scary.

Work Session VI

Purpose: To learn to answer GED essay questions clearly and directly. To use topic sentences to write your first paragraph.

Explanation:

When you read the essay questions on the GED test, you will find two or three sentences. There will be a statement or two and a question that you will need to identify.

After you identify the question you will brainstorm ideas and then write an answer to the question. Your answer may include some words that appeared in the question.

In the first paragraph you will use topic sentences to tell the reader what you are going to write about.

Sample Question:

The "ozone" is a layer of air in our atmosphere that protects us from skin cancer, but it is disappearing rapidly because of products that we use on earth. These products are used in every country so changing the products used in the U.S. wouldn't solve the problem. What do you think should be done to address this worldwide problem?

Can you identify the question?

Does the sample question ask your opinion about cancer? It is asking your opinion about what should be done about the ozone layer in the U.S.? We hope you answered "no." This question asks you to think about how we solve an environmental problem that is worldwide.

Chuck Herring, Publisher, The Adult Learner Magazine: Mastering the GED Essay (Seattle: The Adult Learner Magazine, 1988), pp. 27, 24, 29.

Sample First Paragraph:

Many nations throughout the world use products that deplete the ozone layer. To address this worldwide problem we should form an international organization that would identify the major causes of ozone depletion. This organization would also coordinate scientific research into replacement products and educate the public so they would vote for public officials who support funding of actions that would lead to a solution to the problem. In addition, political sanctions should be carried out against nations that refuse to cooperate.

Discussion of the First Paragraph:

Notice that the first two sentences included phrases from the question. Also notice that the first sentence introduced the topic and the other sentences stated the opinion. The first sentence was used to introduce the topic - you have to pretend that the GED scorer doesn't know the question you are answering.

The student who wrote these introductory sentences, first wrote: "I don't know much about the ozone layer, but since I have to write about it to pass the GED test..." Never make this type of comment on the GED essay test.

Stick to the topic. Be direct.

These sentences are called topic sentences because every other sentence in the essay will be used to explain and expand what is stated here. A sentence about how scary skin cancer is wouldn't belong because it doesn't answer the question. A sentence about having rock concerts to raise money to solve the problem wouldn't belong because methods of raising funds wasn't mentioned in the first paragraph.

The Natural Flow Line

Directions: Your first goal should be to write 200 words in 45 minutes or less without thinking about spelling, grammar or what someone else will think. Just picture scenes from your past and write them down, or think of something that's important to you and express your opinion.

You don't have to write 200 words in 45 minutes at first. Many students spend time working up to this. Below you will find a chart that shows the rate you need to be able to write to eventually reach 200 words in 45 minutes. This chart also shows you if you will have time to write a rough draft and a final draft (more on this later).

There are two days of writing plotted below. In the first one the student wrote 50 words in 10 minutes and the second day she wrote 75 words in 15 minutes. Plot your writing in the same way, so you can keep track of your progress.

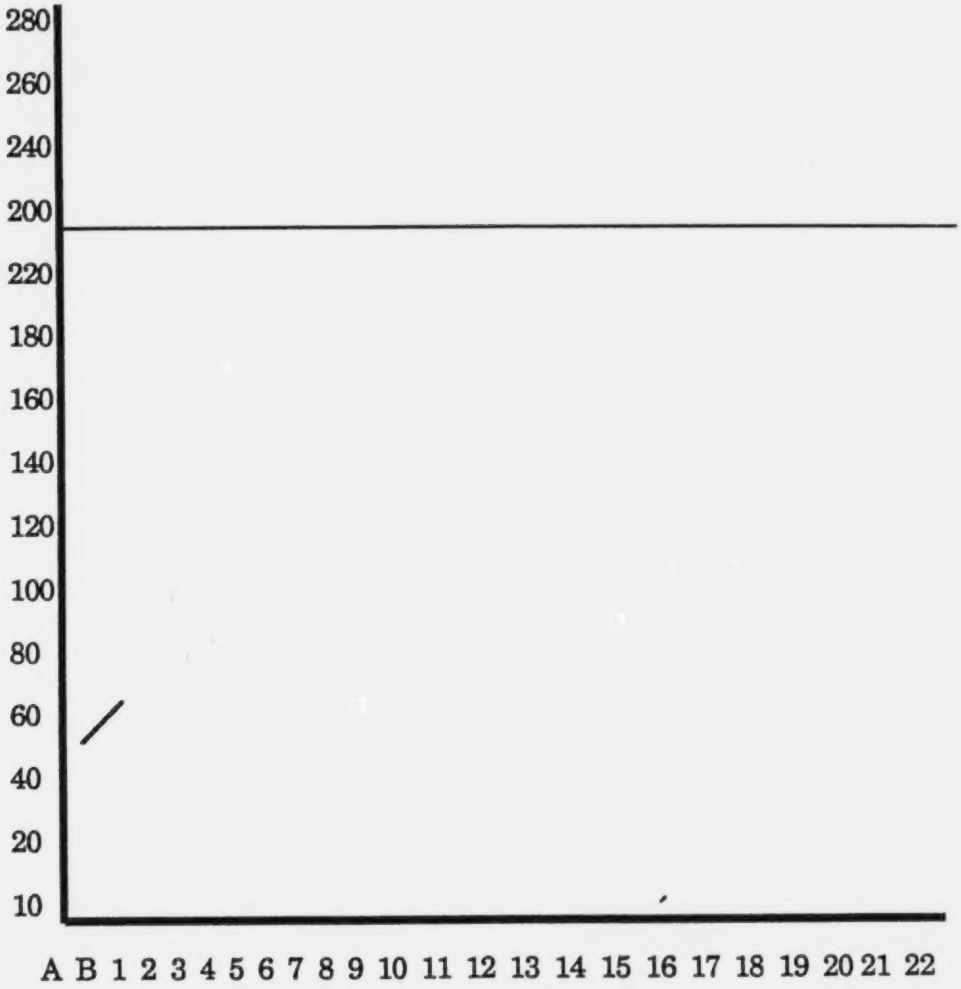
REMEMBER: Writers count words.

Time to Write One Draft

Minutes Worked	Words Written
5 minutes	= 22 words
10 minutes	= 45 words
15 minutes	= 68 words
20 minutes	= 90 words
25 minutes	= 114 words
30 minutes	= 136 words
35 minutes	= 158 words
40 minutes	= 180 words
45 minutes	= 200 words

Time to write a rough and final draft

Minutes Worked	Words Written
5 minutes	= 44 words
10 minutes	= 90 words
15 minutes	= 150 words
20 minutes	= 200 words



Number of Writing Sessions

Work Session VII

Purpose: To learn how to plan your essay.

Explanation: When your GED test is scored it is read by two people. They will spend one to one and a half minutes reading your 200 words. When they are done reading they must feel like they read a well organized paper. For the reader to get that impression you can't just brainstorm a topic and then write everything you know about it. You must learn to make a plan. Below you will find one way to plan your essay. If you are a skillful writer you may want to develop your own method for planning your essay.

1st Paragraph
State Your Main Idea:
You should make a clear and strong statement that answers the essay question. You may add one or two more sentences to introduce your reasons for your opinion.

2nd Paragraph
Develop your Support
In this paragraph you should take one or two of your reasons and develop it. You may want to "free associate" or brainstorm this reason to make sure you don't leave anything out.

3rd Paragraph
Develop Your Support
In this paragraph you should take other reasons you have your opinion and develop them. You may want to "free associate" or brainstorm these reasons to make sure you don't leave anything out.

4th Paragraph
Summarize
In this paragraph you should summarize or tie together your reasons for your opinion. The best writers are able to re-state their opinion in original language so that their beliefs seem very correct and logical.

Where do you get time to plan?

The GED Writing Skills Test has two parts. Part I is the proofreading test and you have seventy-five minutes to complete it. Many students get done with this part of the test early and then they begin to work on Part II before they've used all the time allowed for Part I.

While preparing for Part I, you should see if you can get done 5 to 15 minutes early, so you'll have more planning time for your essay.

If you don't get done with Part I early, you still need to plan, because "evidence of planning" is important to your score. To make time for planning you may not have time to write a complete rough draft. Talk this over with your teacher.

Another Way to Plan

Most students follow the instructions we've given you about brainstorming, writing your first paragraph and planning, but sometimes a strange thing happens. About half way through the rough draft, the student suddenly feels as though something is wrong.

If you get this feeling you should stop writing as soon as possible and ask yourself these questions:

1) What do I really think about this subject?
2) Am I saying what I want to say?
3) Have I stated the most important things first?
4) Does one paragraph connect to the next or do they just seem like separate essays?

What's the reason for this?

Some writers don't know what they think about a subject until they've been writing on it for a while.

SUGGESTED GED PRACTICE WRITING TOPICS

Directions: here are 26 topics to help you practice your writing skills. The actual GED Test has one question that asks you to present an opinion on an issue or to explain something. In preparing your answer for this question, you should take the following steps:

1. Read all of the information accompanying the question.

2. Plan your answer carefully before you write.

3. Use scratch paper to make any notes.

4. Write your answer.

5. Read carefully what you have written and make any changes that will improve your writing.

6. Check your paragraphing, sentence structure, spelling, punctuation, capitalization, and usage, and make any necessary corrections.

You will have 45 minutes to write on the question you are assigned. Write legibly and use a ballpoint pen.

1. In the 1980s, Mitch Snyder became an outspoken advocate of the problems of homeless people. He urged private citizens, businesses, and the government to help.

What do you think can be done to help the homeless? Discuss the answer to this question in an essay of about 200 words.

2. Nuclear power seems to be the answer to our energy problems, yet many groups actively protest the use of nuclear power.

In a 200-word essay, discuss the advantages or disadvantages of nuclear power.

3. Could there ever be world peace? Write an essay of about 200 words in which you answer that question in an organized way.

4. Through advertisements, American manufacturers urge consumers to "Buy American." Is it more important to buy goods made in America or to buy the best product at the cheapest price no matter where it is made? Detail your thoughts in an essay of about 200 words.

5. During World War II, patriotism reached a peak in this country. In the decades following the war, the popularity of patriotism faded, but patriotism seemed to make a comeback in the 1980s. What can the average citizen do to show patriotic feelings? Write a 200-word essay giving your views on this question. Be specific.

6. In many European countries, after junior high school students are sent either to a high school that will prepare them for college or to a high school that will teach them a trade. Many educators feel that American students should be given this choice. Critics feel that 9th-graders are not ready to make such a major decision. Should students be offered a choice of high schools? Write a 200 word essay discussing the negative aspects, the positive aspects, or both.

7. In this country, military service is not mandatory. Some people believe that upon high school graduation, all young men and women should have a two-year tour of duty in some service to the country. What would be the advantages and disadvantages of required service? Write about 200 words detailing your thoughts on this question.

8. Horror movies have fascinated people since Boris Karloff played in "Frankenstein" in 1931. Stephen King is one of the most popular novelists of our time. Movies made from his books are usually box office hits. Why are poeple so attracted to horror movies? Detail your thoughts on this issue in an essay of about 200 words.

9. By the year 2000, almost 24 million people will reach retirement age. Most people prepare financially for retirement, but they often overlook preparing for the sudden increase of free time. Loneliness and a lack of mental stimulation are problems faced by many retirees. What advice would you offer someone about avoiding these two retirement pitfalls? Write an essay of about 200 words describing your ideas.

10. When it comes to educating children, no one can agree about what areas the school should be responsible for and what areas the family should be responsible for. Where should the line be drawn? Write an essay of about 200 words in which you answer that question. Be specific.

11. Ever since the invention of the wheel, inventions have shaped the way we live. What do you think is the most important invention of this century and why? Write an essay of about 200 words in which you answer that question. Be specific.

12. Senior citizens have much to offer society. Many young people are becoming friends of senior citizens because they have found that they can learn a lot from their senior friends. What can senior citizens teach young people? Think about this question. Write a 200 word essay expressing your thoughts in detail.

13. Habits are hard to break, assuming, that is, all habits are bad. Can people develop good habits? What good habits would help people improve the quality of their lives? Write an essay of about 200 words describing your ideas.

14. "Every mother is a working mother." Do you agree or disagree with this statement? Write an essay of about 200 words detailing your thoughts in an organized way.

15. Owning a business and being their own boss is the dream of many poeple. What would be the advantages of owning your own business? Would there be disadvantages? Write a 200-word essay explaining the advantages and disadvantages.

16. Mortgage interest rates rise and fall with regularity. Since the end of World War II, owning a home has been considered part of the American Dream when interest rates were sky-high.

Is owning a home really an important part of being a success? Detail your thoughts on this question in an essay of about 200 words.

17. Since 1974 the maximum speed limit is=n most places has been lowered to 55 m.p.h. Yet many drivers consistently exceed the legal speed limit.
Should the speed limit be raised again to 70 m.p.h. on interstate highways? Consider the advantages, the disadvantages, or both. Write down your thoughts in a 200-word essay.

18. Since the 1950s and the comedy program "I Love Lucy," television shows have portrayed American family life with humor as

well as drama. Critics of television claim that these shows do not give watchers a realistic view of families.

Does television's version of family life hurt or improve the way we feel about our own families? Answer that question in a composition of about 200 words.

19. The number of people living alone increases yearly. Many choose to live alone, while some are forced to live alone.

Does a person who lives alone necessarily have to be lonely? Why or why not? Detail your thoughts on this topic in a 200-word essay.

20. For many years, scientists have argued about whether our personalities are influenced by heredity or by the environment we are raised in.

Do you feel that the heredity, the environment, or both influence the development of personality? Detail your thoughts in a 200-word essay.

21. Traditionally, mothers have stayed at home to care for their children while fathers worked to earn an income for the family to live on. Today, however, more fathers are becoming at-home family caretakers while their wives work to earn the family income.

What joys or difficulties might a man experience if he chooses to stay at home and care for the children? Answer this question in an essay of about 200 words. Be specific.

22. Many states have strict punishments for people who drive while under the influence of alcohol. Many citizens think that the state authorities should be even harsher on drunk drivers.

How should the authorities enforce drunk driving laws? Write a 200-word essay giving your views on this topic. Be specific. Give examples to support your views.

23. In 1963, Dr. Martin Luther King Jr. said, "I have a dream that one day this nation will rise up and live out the true meaning of its creed, 'We hold these truths to be self-evident: that all men are created equal.'"

In the United States today, has Dr. King's dream come true? In a composition of about 200 words, answer that question. Give specific examples.

24. Many people believe that you cannot learn everything in school. Some say that experience is the best teacher.

What is more important to a person's education: things learned in school or things learned through real-life experiences? Write a 200-word essay answering this question. Be specific. Give examples to support your views.

25. For generations, children have been cared for in the home. Now with many parents working outside the home, child care has become a major worry.

To make child care easier, many businesses are providing child care for their employees. In an essay of about 200 words, discuss the advantages of child care provided at a parent's workplace, the disadvantages, or both. Be clear and give specific examples.

26. Most modern-day households have at least one television set. The average person watches television 31 1/2 hours a week.

If television had never been invented, how would life today be different? Write a 200-word essay detailing your thoughts. Be specific.

Pronoun Unit Answers

Introduction to Pronouns

Read the following sentence:

> **John** was happy because **John** found **John's** dog.

Does this sentence sound unusual or awkward? Did you notice that the word *John* was repeated three times?

Now compare:

> **John** was happy because **he** found **his** dog.

Does this sentence sound more natural? Did you notice that *John* and *John's* were replaced by *he* and *his* ?

Words like *he* and *his* are called **pronouns**. Pronouns take the place of nouns. When we talk or write, we don't like to repeat ourselves too much. Instead of repeating some nouns, we can use pronouns.

Pronouns work a lot like nouns in a sentence. A pronoun can be the subject of a sentence, just as a noun can. A pronoun can be the object of a verb, just like a noun.

But in many ways, pronouns are more complicated than nouns. There are many different kinds of pronouns, and some have several different forms. (*I* and *me* are really different forms of the same pronoun, for example.)

Exercises with answers

In each of the sentences below, two words are underlined. One is a noun. The other is a pronoun. Write the pronoun in the space that follows the sentence.

Example: Philip scratched his head. his

1. Ramona hasn't finished her homework yet. her
2. Lewis spoke to her yesterday. him
3. Bill's dog bit him on the leg. her
4. The principal wanted to know who was absent. who
5. Anyone could have stolen the jewels. Anyone
(Be careful! This is tricky.)

Rosemary Grebel and Phyllis Pogrund, Basic English Grammar (New York: Educational Design, Inc., 1987) pp. 40-52.

Personal Pronouns - Subject Form

The pronouns he, her, they, and others that you worked with in the last lesson are called **personal pronouns**.

Personal pronouns have many forms. You use them all often when you talk. Pronouns have **number** - that is, they can be singular or plural, like nouns. They also are grouped according to what grammar calls **person**. Every personal pronoun is classed as either **first person, second person**, or **third person**. A look at the chart will show you what number and person mean:

	NUMBER	
	Singular	Plural
First Person	I	we
Second Person	you	you
Third Person	he she it	they

Look carefully at the chart until you understand it. Notice particularly that there are three third person singular pronouns.

The labels *first person, second person,* and *third person* may be new to you. But the personal pronouns that they describe are all ones you use every day.

The personal pronouns in the chart are the ones used as subjects of sentences. We call them **subject pronouns.** You cannot use any other forms of person pronouns as the subject of a sentence:

> WRONG: **Her** opened the door. (You are not likely to make this mistake.
>
> WRONG: Bill and **her** walked in. (You might make this mistake.

You always must use the subject form of a personal pronoun as the subject of a sentence:

> RIGHT: **She** opened the door.
>
> RIGHT: Bill and **she** walked in.

Exercises

In each sentence below, underline the noun or nouns that make up the subject of the sentence. Then rewrite the sentences, changing each noun subject to a pronoun. Notice that a sentence may have two noun subjects that are replaced by one pronoun.

Examples: The chicken is delicious. **It is delicious.**

Mom and Dad like picnics. **They like picnics**.

1. The sky is blue today. It is blue today.
2. The Joneses are having fun. They are having fun.
3. A girl was looking around. She was looking around.
4. The man appeared to be smiling. He appeared to be smiling.
5. The scientists hope it won't rain. They hope it won't rain.

In each of the following sentences, one or more subject pronouns has the wrong form. Write the correct forms in the blank after each sentence. Use the subject pronoun chart at the beginning of this chapter to help you.

Example: Him and me went to the store. **He, I**

6. Mom and me are cooking a turkey tonight. I
7. Him and her had an argument. He, she
8. Her and my mom are good friends. She
9. Them and their friends are welcome to come. They
10. Us two are the only ones who really understand. We

Object Pronouns

In the last lesson, you worked with subject pronouns. Personal pronouns also have an object form. Pronouns with this form are called **object pronouns**. As you can guess, they are used in sentences as objects of verbs.

Here are the object forms of personal pronouns:

	Singular	Plural
First Person	me	us
Second Person	you	you
Third Person	him her it	them

Always use the object form of a pronoun as the object in a sentence:

Greg phoned **him.**

Essie phone **you** and **her**. (**not** you and she!)

Exercises

In each sentence below, substitute the correct object form of a pronoun for the underlined noun or nouns. Look at the chart above when you need to.

Examples:	Take a piece.	Take **it.**
	I got several letters.	I got **them**.

1. I went fishing with Max.
   I went fishing with him.

2. A fish got the bait twice.
   A fish got it twice.

3. Then we caught some boots.
   Then we caught them.

4. Later we caught a mermaid.
   Later we caught her.

5. She was undersized, so we threw the mermaid back.
   She was undersized, so we threw her back.

6. A reporter didn't believe Max and me.
   The reporter didn't believe us.

7. Do you believe the story?
   Do you believe it?

8. If you don't just ask Max.
   If you don't just ask him.

9. Or you can ask the mermaid.
   Or you can ask her.

10. There's no point in asking the fishes.
    There's no point in asking them.

Possessive Pronouns

Like nouns, personal pronouns have possessive forms. In fact, each pronoun has two possessive forms. One form is used in front of a noun. The other is used by itself, in place of a noun:

	BEFORE NOUNS	
	Singular	Plural
First Person	my	our
Second Person	your	your
Third Person	his her its	their

	IN PLACE OF NOUNS	
	Singular	Plural
First Person	mine	ours
Second Person	yours	yours
Third Person	his her its	theirs

For example:

Your sweater is warmer than **my** jacket. (Form used before a noun)

Yours is warmer than **mine.** (Form used in place of a noun)

Notice one thing about the spelling of these possessive forms. The possessive forms of personal pronouns do not have apostrophes. If you see the spelling *it's* with an apostrophe, it's not a possessive. It's a contraction, short for *it is*. And the spelling *you're* means "you are" the spelling *they're* means "they are." None is a possessive. They are all contractions.

Exercises

Circle all the possessive pronouns in the conversation below.

1. "My house is bigger than your house," Jamie said.

2. "So what?" I said. "Our car is newer than yours."

3. "Well," Jamie said, "You're not as fast a runner as either of my brothers. They're better swimmers, too. And their diving form is the best there is."

4. "OK, Jamie," I said. "The biggest and best dog in town is mine. Her bark is the loudest. If you see a huge footprint, it's hers. Why are we having this stupid conversation?"

5. "Don't make fun of my dog," said Jamie.

Reflexive and Intensive Pronouns

There is one last group of forms of the personal pronoun.

	Singular	Plural
First Person	myself	ourselves
Second Person	yourself	yourselves
Third Person	himself herself itself	themselves

This group of pronoun forms is used in two ways:

As Reflexive Pronouns. When a personal pronoun in a sentence refers back to the subject, it takes one of the forms listed above. Used this way, it's called a **reflexive pronoun**:

I cut **myself.**

They work by **themselves.**

As Intensive Pronouns. A personal pronoun in one of these forms sometimes comes after another noun or pronoun to add emphasis. Used this way, it's called an **intensive pronoun**:

Jim **himself** wrote the letter.

I **myself** am not sure about the plan.

An intensive pronoun can sometimes go somewhere else in the sentence:
Jim wrote the letter **himself.**

I am not sure about the plan **myself.**

Notice the following about these pronoun forms:
-In the singular, they have the ending *-self*. In the plural, however, they have the ending *-selves*.

-In the third person, the correct forms are *himself* and *themselves*, not "hisself" or "theirselves." It's true that logically, "hisself" is more like *myself* than the correct form, *himself*, is. But English isn't always a logical language. "Hisself" and "theirselves" are incorrect.

Exercises

Fill in the blanks of the following sentences with the correct reflexive pronoun.

Example: I can easily do it all by **myself**.

1. Alice likes to work by herself.
2. Our cat licks itself.
3. We teach ourselves many things.
4. He looked at himself in the mirror.
5. "Kids, wash yourselves before lunch."

Fill in the blanks of the following sentences with the correct intensive pronoun.

6. They themselves were responsible.
7. You yourself noticed the problem.
8. Betty herself was unable to get the waiter's attention.
9. Fred spoke to Mr. Snyder himself.
10. I'm eager myself to try the plan.

In each of the following sentences, a pronoun is underlined. In the blank spaces after the sentences, write what each pronoun is. Write **R** if it is a reflexive pronoun and **I** if it is an intensive pronoun.

Example: I could hardly hear myself speak. **R**

11. Do you really like yourself? **R**
12. I cannot imagine myself doing such a thing. **I**
13. Brenda couldn't do the job herself. **I**
14. We ourselves will fight for our country. **I**
15. We will be fighting for ourselves. **R**

Indefinite Pronouns

Is **everybody** ready? **Nobody** fall asleep, now.

Some of your aren't paying attention. I hope I'm not boring **anyone**.

The words in bold type above are examples of a kind of pronoun called an **indefinite pronoun**. Indefinite pronouns also include words like *all, each, any*, and *some*. And most words that begin with *every, any, some* and *no* are also indefinite pronouns. There are many others as well. The list below contains the most common ones. Look over the list carefully:

	Indefinite Pronouns
	all each either neither
The "Every" Group	everyone everybody everything
The "Any" Group	any anyone anybody anything
The "Some" Group	some someone somebody something
The "Other" Group	others another
The "No" Group	no one none nobody nothing
The "How Many" Group	one both few several less many much more most plenty enough

Indefinite pronouns are not used before nouns. So if we say "*all men*" or "*any food*," for example, all and any are not pronouns. They describe nouns. They don't take the place of nouns. (They are adjectives).

Exercises

Write in the correct indefinite pronouns to complete these sentences. Use the pronoun box. Use each pronoun only once. Check it off as you use it.

Examples: Do you have candy? I'd like **some**.

PRONOUN BOX

✓ all
some
both
someone
anyone
either
anywhere
everybody

1. Is anyone home? Someone must be here.

2. Both you and Trini said you'd visit Ella.

3. I'll go with either you and your sister.

4. He's sick. He doesn't want to go anywhere.

5. Twenty people are invited, and they're all able to come. Everybody will be there.

Demonstrative Pronouns

"**That** is my book."
The blue one?"
"No, **this**; **that** I just picked up."

This and that, and the plural forms these and those, are called **demonstrative pronouns** when they are used in place of a noun. They "point something out" - which is the original meaning of the word demonstrate.

This and these are used to point out things that are nearby.

That and those are used to point out things that are farther away.

So there are only four demonstrative pronouns:

	Singular	**Plural**
Nearby	this	these
Farther Away	that	those

(Just like indefinite pronouns, demonstrative pronouns are not used before nouns. So if we say these books, we aren't using these as a pronoun.)

Exercises

Complete each sentence below with a demonstrative pronoun and the correct form of the verb *be*. Choose for yourself whether you prefer to use a form of *this* or of *that* in the sentence.

Example: That is a beautiful.

1. This is gold here in my hand.

2. Those/These are her new shirts.

3. These are new pens here on the desk.

4. That is her desk over there.

5. Those are the elephants on the other side of the zoo.

Interrogative Pronouns

Who is the tallest person in the room?

Which of the video games did you play?

What is your name?

As you can see, the words in bold type above are used to form questions. They are called **interrogative pronouns**, from the word interrogate, which means "to ask a question." The three basic interrogative pronouns are the ones given above: *who, which*, and *what.*

Who has two other forms:

Whose

Whom

Whose is used to ask questions to find out possession.

Whom is the object form of who. *Whom* is not always used in speech, but it common in writing.

Compounds with the ending *-ever, like whoever, whomever, whichever*, or *whatever* are also forms of interrogative pronouns.

Here is the complete list of interrogative pronouns:

	Basic Form	**With-ever Ending**
Subject Form	who	whoever
Object Form	whom	whomever
Possessive Form	whose	No Standard Form
	which	whichever
	what	whatever

Like indefinites and demonstratives, the interrogatives are not pronouns when they are put before a noun. So if we say, "Whose books are these?" then *whose* is not being used as a pronoun.

Exercises

Circle the interrogative pronouns in this conversation. The first one has been done for you as an example.

Clerk: Good afternoon, sir. What may I do for you?

Shopper: I'd like to buy a ring.

Clerk: Certainly. Who is it for?

Shopper: A friend.

Clerk: What is the occasion?

Shopper: It's for a birthday.

Clerk: What would you like? Maybe a birthstone ring?

Shopper: That's a good idea. Which are the birthstone rings?

Clerk: All these. What is your friend's birth month?

Shopper: What are the prices? Er, which are the cheap ones?

Clerk: Whatever do you mean, "cheap ones" There are no cheap ones.

Shopper: Which of the discount jewelry stores is this?

Clerk: I beg your pardon! This is Snooty Jewelry Store! Whoever told you we gave discounts?

Pronoun Antecedents and Agreement

Pronouns take the place of nouns. Often, the noun that the pronoun replaces or refers to is found earlier in the sentence. Sometimes it is in the sentence before. For example:

> The director always talked with the **actors** before photographing **them**.
>
> **Jenny** looked away. **She** didn't want to speak.

The word that a pronoun replaces or refers to is called the pronoun's **antecedent**. (The word *antecedent* comes from two Latin words meaning "before" and "coming." An antecedent "comes before" the pronoun that refers to it.)

The antecedent of a pronoun may be another pronoun. It can, for example, be an indefinite pronoun:

> "I expect **everyone** to do **her** best," said the dance instructor.

Not all pronouns have antecedents. Indefinite pronouns often do not. Neither does the personal pronoun *I*. *We* and *you* often don't have antecedents as well:

> Duke Otto gave **everyone** a big smile. (No antecedent)
>
> I was not fooled, however. (No antecedent)

A pronoun is expected to **agree** with its antecedent. This means, for example, that if the antecedent is singular, the pronoun must be singular too. If the antecedent is plural, the pronoun must be plural also. If the antecedent is female, a personal pronoun referring to it must be female as well. And so on:

> Bert scratched **his** head thoughtfully.

In the example, *Bert* is singular and male. So is the pronoun *his* that refers to Bert.

Exercises

Write the antecedent of each underlined pronoun, if any, in the blank space after each sentence. If the pronoun has no antecedent, write the words "no antecedent."

Examples: I raised my hand. *I*

Everyone laughed. **no antecedent**

1. Who delivered the mail yesterday? no antecedent
2. Vince looked around. He didn't see anything. Vince
3. The dog wagged its tail eagerly. dog
4. Bill wondered if anyone would telephone him. Bill
5. This broccoli looks great. I'd like some. broccoli

Review

1. Circle all the pronouns you can find in the story below. To help you, the number of pronouns in each paragraph is put in parentheses.

a. "Hi," Anna said, "Can you come to my party on Saturday?" (2)

b. "Who will be there? Anyone I know?" asked Henry. (3)

c. "All of your friends will be there, and everyone who is anyone in this town, too," she replied. (6)

d. "Will it be at your house, or whose? This sounds like a party I *don't* want to miss." (5)

e. "Well," Anna answered slowly, "I am not sure. Can it be at *your* house? It can't be at mine." (5)

f. Henry was surprised. "My place is too small for everyone you have invited. Do you mean you have nowhere to have this?" (6)

g. "How about your friends' places? Will you ask them for me?" Anna continued. (4)

h. "You'll have to ask them yourself," Henry said. "Tell me, how can you invite all of us, when there is nowhere for us to go?" (8)

i. "Who doesn't like a party? Everyone I asked wants to go, so I just invited them all." Anna said simply. (6)

j. "Anyone who would plan a party without a place to have it and invite everybody, will either lose all of her friends or have a great street party! I guess it could be fun. But, thanks, I'm busy on Saturday." Henry walked away shaking his head. (9)

In the following sentences, draw an arrow from each pronoun to its antecedent:

2. Jamie took his picture off its hook on the wall.

3. Leroy told his mother that she wasn't being fair to him.

In the following sentences, there are several pronouns that have the wrong form. After each sentence, write the correct form of each incorrect pronoun. (If a pronoun form is correct, you don't have to write it.)

4. The tree's branches shaded Fred and I from the rain. ____________________

5. Me and my friends are going out now. ____________________

WRITING UNIT ANSWERS

WRITING

Page 55 – Comparisons will vary but must be of the proper type. 1. M 2. S 3. M 4. M 5. S 6. M 7. S 8. S

Page 56 – 1. E 2. E 3. A 4. S 5. S 6. E 7. A 8. A 9. S 10. E 11. A 12. S 13. A 14. S 15. E

Page 57 – A. 1. Water has many unusual properties. 2. No main idea is stated. 3. The camel is well-equipped for desert travel. 4. No main idea is stated. 5. Though insects are small, many of them can cause great damage. B. Sample answers: 1. That Strange Stuff–Water 2. Pigeon Wars 3. The Ship of the Desert 4. The Amazing Hippopotamus 5. Insects–Tiny but Destructive

Page 58 – A. Number three should be crossed out. Sample answer: Native Americans used their keen perceptions for hunting. B. Number two should be crossed out. Sample answer: Investigation is a method of learning that brings many benefits.

Page 59 – A. Summary two should be underlined. Sample answer: Summary 1 is not mentioned in the paragraph. Summary 3 gives details but not the main idea of the paragraph. B. Answers will vary but should give a briefer version of the paragraph.

Page 60 – A. I. A. Overturned drawers B. Smashed lamps C. Slashed cushions D. Closet door off its hinges E. Clothing on floor F. Dumped waste baskets; II. A. Two burly men inside B. A large box between them B. Answers will vary.

Page 61 – Correct order of main headings, top-to-bottom and left-to-right: V, II, III, I, IV. Numbered subtopics will vary.

Page 62 – Answers will vary but should give a briefer version of the paragraph.

Page 63 – Details not in paragraph: Troubles among fishermen, X-rayed for disease, Cans sterilized, Cans coded, Placed on trucks and trains, Reach your table; Details not in list: Unloaded fishing boats, Washed thoroughly, Cans placed in cooker, Cans steamed, Packed into wooden boxes, Shipped worldwide

Page 64 – Sample answers: The house is unoccupied. Picture detail: The house is in disrepair The neighbors don't like this house. Picture detail: The houses on either side are neat and well maintained.

Page 65 – Sample answers: 1. Mr. M. is too ill or weak to care for the house. He doesn't have anyone to help him with the house. He doesn't have money for repairs. 2. Mr. M. needs friends and neighbors to help him repair the house and yard. 3. Ask Mr. M. Discuss the situation with neighbors or a social worker.

Page 66 – A. Born in 1832 B. Teacher of mathematics II. Later life A. Took the pen name Lewis Carroll B. Wrote *Alice in Wonderland* C. Died in 1898 B. Answers will vary but should be in chronological order.

Page 67 – 1. recipe book, cook book 2. health book, first aid book 3. gardening book, instructions on a package of zinnia seeds 4. astronomy book, science book 5. spelling book, dictionary 6. individual books describing careers, counseling books 7. chart on cursive letters, handwriting book 8. hospital manual, book about careers 9. newspaper, recent science magazines 10. car owner's manual, printed instructions that come with new speakers

Page 68 – A. 1, 2, 3, 5 B. Answers will vary.

Page 69 – Answers will vary.

Page 70 – A. Sample answers: The photograph of the Lincoln Memorial best illustrates the idea of nobility, which is the theme of the paragraph. B. Sample answers: The Statue of Liberty, the Jefferson Memorial, the Washington Monument.

Page 71 – Sample answers: A. 1. is loyal, is understanding, is thoughtful 2. encourages people to explore and question, maintains a certain amount of order and discipline, offers a wide variety of courses 3. sets goals, works to accomplish goals, is happy with self B. 1. No 2. Sample answer: People's values differ.

Page 72 – A. almost as large as a dinosaur/short and sharp like the teeth of a saw/Today, explorers of forests and jungles are constantly on the lookout for this wild and dangerous beast. B. Answers will vary but should include the tiger's true size, the true shape of its teeth, and the fact that it is now extinct.

Page 73 – 1. Meteorologist: Sample answer: current weather data, past weather data 2. Homeowner. Sample answer: damage done to homes and property 3. Artist. Sample answer: the movement of the trees, the sound of the wind 4. Young child. Sample answer: the unknown, the reactions shown by adults

Don Barnes et al. Critical Thinking For Adults (Austin: Steck-Vaughn Company, 1987) pp. 94-95.

SOCIAL STUDIES

To The Student,

The Social Studies test is designed to test your skills in understanding reading passages in history, geography, economics, behavorial science, and political science. Included in this packet are reading selections that cover all of the five areas of social studies. This packet also includes a blank map of the United States and blank map of the world (finished "keys" are attached). Even though you do not need to reproduce this information on blank maps when you take your GED Social Studies Test, the map exercises will be helpful in reminding you where states are in the United States and where continents and major bodies of water are in the world. The more familiar you become with this information, the more comfortable you will be when you see any map related questions on your test.

We encourage you to do all the "Think and Write" activities that are incorporated throughout this packet. These activities will not only enhance your writing abilities but will also challenge your thinking in social studies issues.

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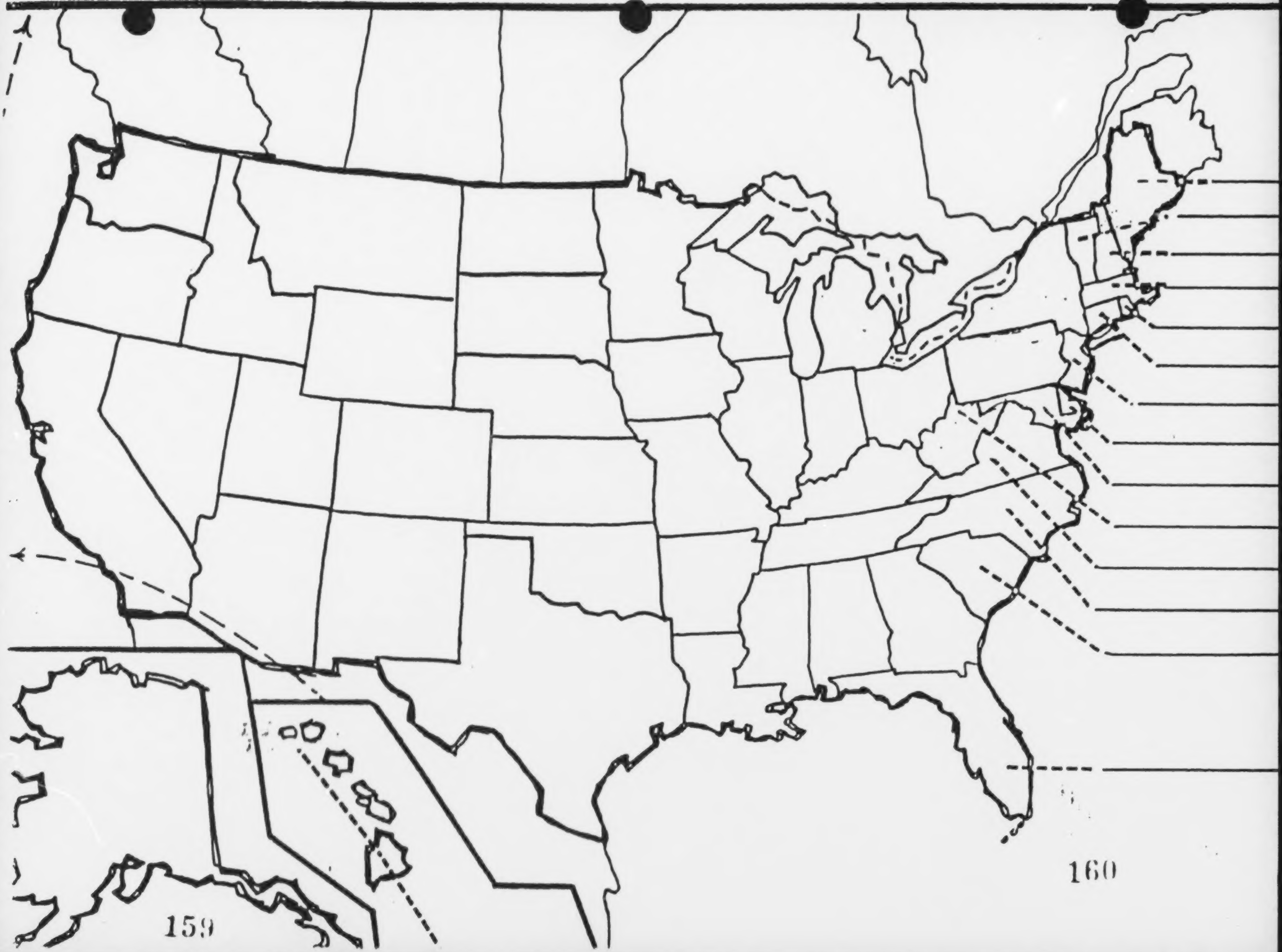
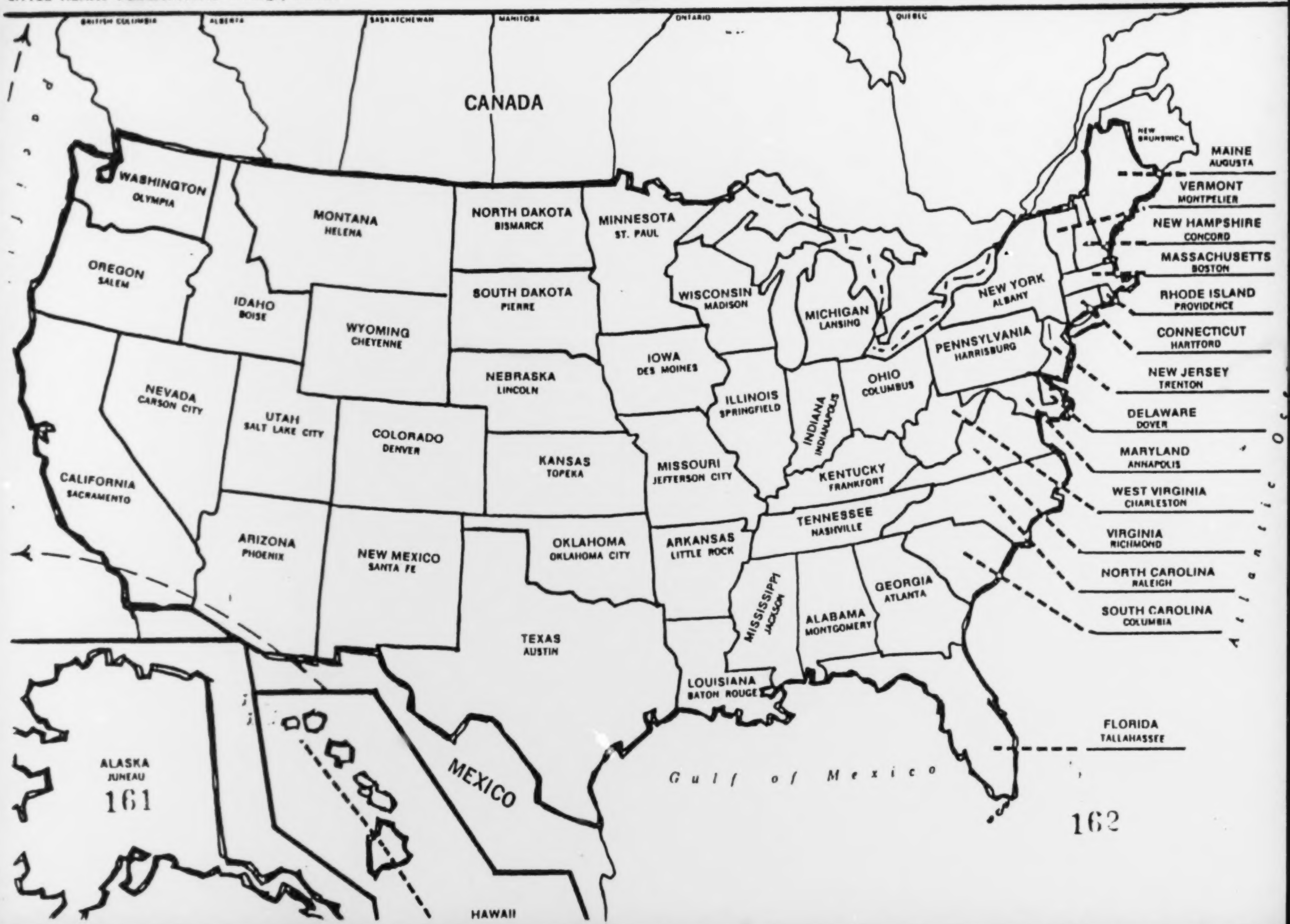
UNITED STATES



LITTLE KENNY P LICATIONS Chicago, Illinois

UNITED STATES— CAPIT LS


BRITISH COLUMBIA
ALBERTA
SASKATCHEWAN
MANITOBA
ONTARIO
QUEBEC
CANADA
NEW BRUNSWICK
WASHINGTON
OLYMPIA
OREGON
SALEM
CALIFORNIA
SACRAMENTO
NEVADA
CARSON CITY
IDAHO
BOISE
MONTANA
HELENA
WYOMING
CHEYENNE
UTAH
SALT LAKE CITY
ARIZONA
PHOENIX
COLORADO
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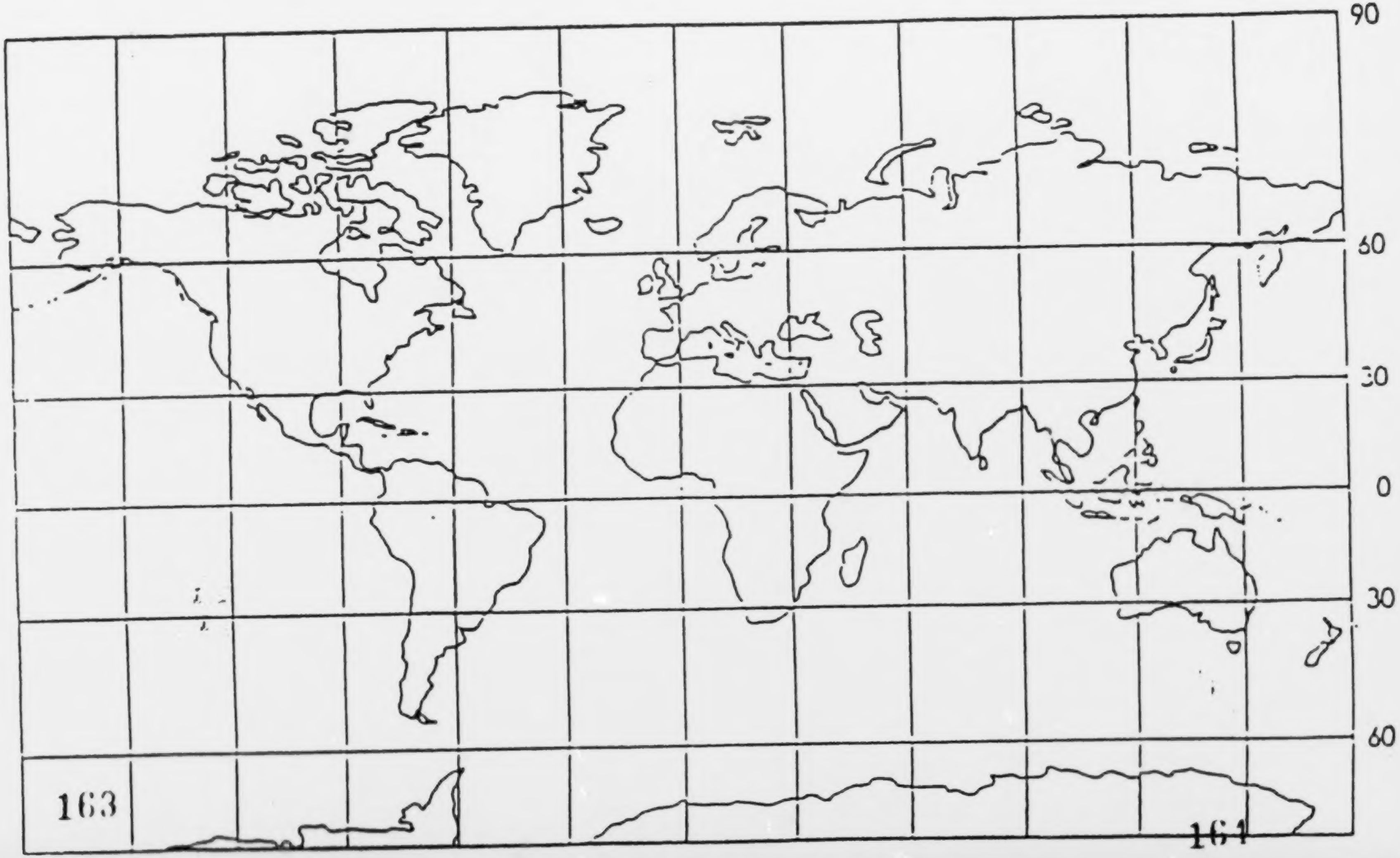
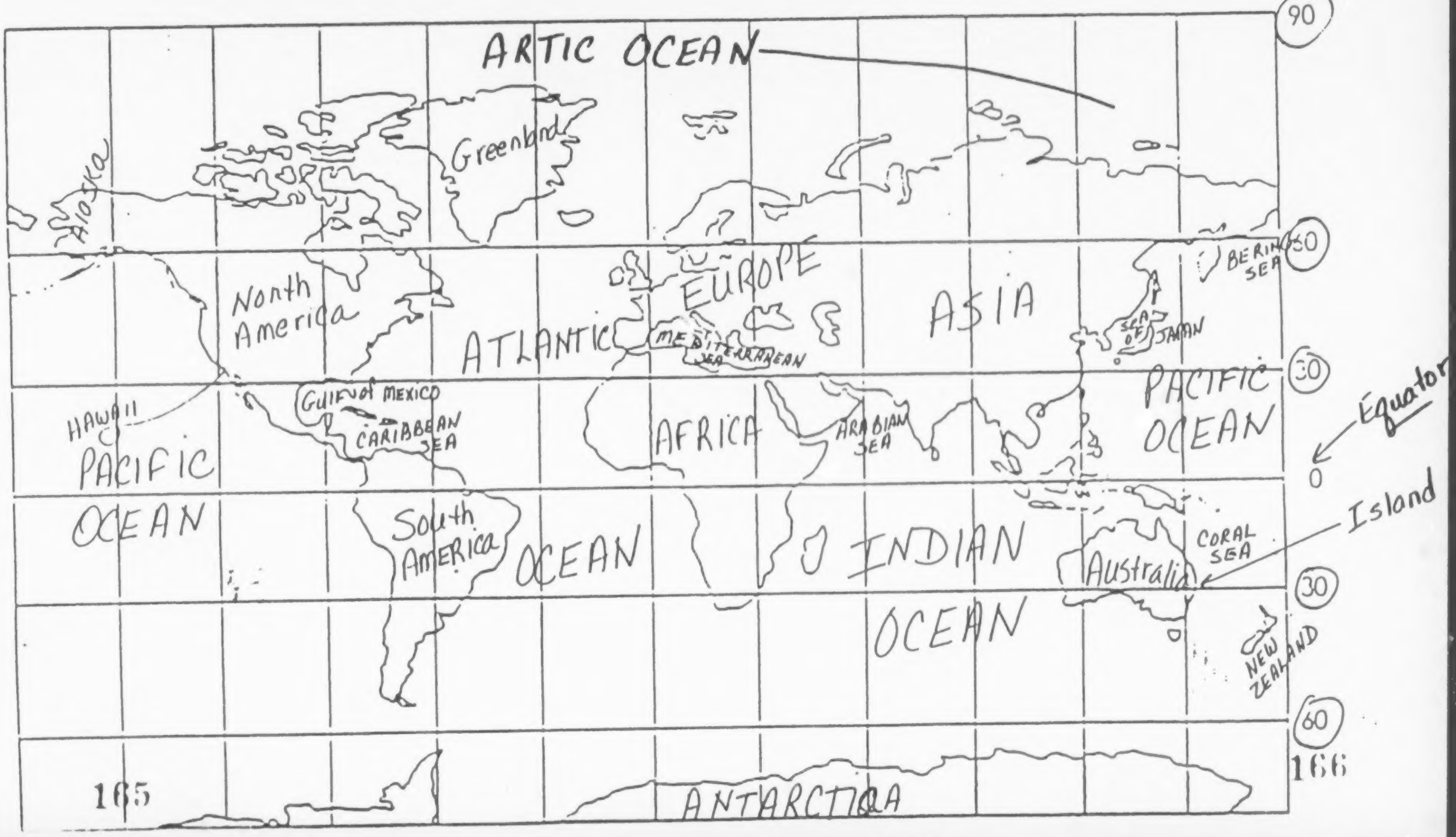
SANTA FE
NORTH DAKOTA
BISMARCK
SOUTH DAKOTA
PIERRE
NEBRASKA
LINCOLN
KANSAS
TOPEKA
OKLAHOMA
OKLAHOMA CITY
TEXAS
AUSTIN
MINNESOTA
ST. PAUL
IOWA
DES MOINES
MISSOURI
JEFFERSON CITY
ARKANSAS
LITTLE ROCK
LOUISIANA
BATON ROUGE
WISCONSIN
MADISON
ILLINOIS
SPRINGFIELD
MICHIGAN
LANSING
INDIANA
INDIANAPOLIS
OHIO
COLUMBUS
KENTUCKY
FRANKFORT
TENNESSEE
NASHVILLE
MISSISSIPPI
JACKSON
ALABAMA
MONTGOMERY
GEORGIA
ATLANTA
NEW YORK
ALBANY
PENNSYLVANIA
HARRISBURG
MAINE
AUGUSTA
VERMONT
MONTPELIER
NEW HAMPSHIRE
CONCORD
MASSACHUSETTS
BOSTON
RHODE ISLAND
PROVIDENCE
CONNECTICUT
HARTFORD
NEW JERSEY
TRENTON
DELAWARE
DOVER
MARYLAND
ANNAPOLIS
WEST VIRGINIA
CHARLESTON
VIRGINIA
RICHMOND
NORTH CAROLINA
RALEIGH
SOUTH CAROLINA
COLUMBIA
FLORIDA
TALLAHASSEE
Gulf of Mexico
MEXICO
ALASKA
JUNEAU
HAWAII
Atlantic Ocean
Pacific

On the world map, place the following items:

1. Continents (7)
2. Oceans (4 major)
3. Other recognizable land areas or bodies of water
4. Mark the line of latitude that is the equator
5. Mark the line of longitude that is the Prime Meridian



1. Continents: North America, Africa, Australia, Europe, South America, Asia, Antarctica
2. Oceans: Atlantic, Pacific, Indian, Artic
3. Other land areas or bodies of water


ARTIC OCEAN
Alaska
Greenland
North America
EUROPE
ASIA
BERING SEA
SEA OF JAPAN
ATLANTIC
MEDITERRANEAN SEA
PACIFIC OCEAN
Gulf of MEXICO
HAWAII
CARIBBEAN SEA
AFRICA
ARABIAN SEA
PACIFIC OCEAN
Equator
0
South America
OCEAN
INDIAN OCEAN
Australia
CORAL SEA
Island
NEW ZEALAND
ANTARCTICA
90
30
30
30
60

The Stated Main Idea

Read the following passage. Then answer the questions and fill in the chart below. Use the facts from the chart to write a main idea sentence.

Rosa Parks Sparks Boycott

On December 1, 1955, in Montgomery, Alabama, a petite black woman was on her way home from work. She boarded a bus and sat in the "colored section." As more and more people got on, a white man was left standing. When the driver asked three black people to stand so that the white man could sit down, they did. But when the driver asked Rosa Parks to, she refused to give up her seat. She told him that she was not moving because she was tired and had paid her fare like everybody else. The driver threatened to have her arrested. When she still refused to move, he called the police.

The Parks case sparked the Montgomery bus boycott led by Dr. Martin Luther King, Jr. The boycott, which lasted a year, was the beginning of a movement that made segregation of public places in the South illegal.

WHO?	
WHAT?	
WHERE?	
WHEN?	
HOW?	

Main idea sentence: ____

____

____

THINK & WRITE: Henry David Thoreau served a jail sentence rather than pay a tax that was levied to support the Mexican-American War. He, like Rosa Parks, believed that citizens have the right to disobey laws that they think are unjust. Do you agree or disagree with Thoreau's and Park's positions?

Martha J. Barnes, Reading and Critical Thinking in the Content Areas (Chicago: Contemporary Books, Inc., 1988) pp. 4-5.

STRATEGIES FOR SUCCESS

GETTING MEANING FROM CONTEXT

Salt and..........
Bread and..........
Up and..........

You can easily fill in the blanks with words like *pepper, butter,* and *down.* You know the word in the blank because you are not looking at single words- you are reading them along with other words. You are reading them in context.

The above examples are familiar words, in familiar combinations. But the context can help you understand difficult words too. Below are two strategies to help you figure out a word's meaning- from context.

STRATEGY 1: Think it through.

1. Read and then reread the sentence.
2. Use your logic to figure out the word.

Example: What does the word "hemisphere" mean in this sentence?

> If you look at a globe, you will notice that the earth is divided into two hemispheres.

A globe is a round object. If you divided it into two hemispheres, a "hemisphere" must be half. It could be the top half or bottom half. It might be the left half or right half of the globe.

Write: What do you think the word "mineral" means in the following sentence? Write your answer. Use Strategy 1.

> The United States and Canada are also rich in oil, coal, and other minerals for their factories.

A mineral is: ______________________________

Judith Andrews Green, Social Studies: Strategies for Success (Austin: Steck-Vaughn Company, 1987) pp. 20-21, 108.109

STRATEGY 2: Look for key words and phrases.

1. Look at any words or phrases that might help explain the word. These words may come before or after the word you don't know.
2. Use your logic to figure out what the word means.

Example: What does the word "industrialized" mean in this sentence?

> Europe is an industrialized continent. Its mines, factories, and farms are very modern.

It says the continent of Europe has "mines, factories, and farms" and they are "very modern." So *industrialized* probably means "having mines, factories, and farms that use the latest equipment and methods."

Write: What does "monsoon" mean in this paragraph? Write your answer. Use Strategy 2.

> In southern and Southeast Asia, there are seasonal winds called monsoons. For part of the year, the winds blow from the land toward the ocean. These winds are dry. Then the winds change direction and blow from the ocean over the land. These winds bring heavy rains.

What is a monsoon? ______________________________

____

What does it do? ______________________________

____

FINDING THE MAIN IDEA

1. THE TOPIC SENTENCE

Studying becomes easier of you know how to pick out main ideas. A paragraph often has one sentence that tells the main idea. It is the topic sentence.

STRATEGY: Find the sentence that tells the main idea.

1. Look for the sentence that seems to relate to all the other sentences in the paragraph.

2. Remember that the topic sentence can be anywhere in the paragraph.

Example: What is the topic sentence of this paragraph?

Sociologists, psychologists, and anthropologists have different ways of looking at the same behavior. A sociologist would look at the social causes of a problem. A psychologist would try to find out how a person with a problem thinks and feels. An anthropologist would study the culture in which the problem exists.

The last three sentences give examples of how the three different kinds of behavioral scientists examine a problem. The first sentence gives a kind of overview that ties the examples together. The first sentence is the topic sentence.

Write: Write the topic sentence of the following paragraph. Use the strategy above.

> Sex-role socialization starts early. Most newborn babies are usually dressed in blue if they are male and in pink if they are female. As they grow older, boys get toys like trains, trucks, and guns. Girls get dolls and toy kitchens.

2. THE UNSTATED MAIN IDEA

Sometimes a paragraph has no topic sentence. You have to figure out the main idea yourself.

STRATEGY: Think it through.

1. How do all the sentences relate to each other?
2. Use your logic to figure out the main idea.

Example: What is the main idea of this paragraph?

> Laws are formal and written rules. If people break the law, they will be officially punished. They can be fined or sent to jail. But if someone doesn't follow a norm, he or she will only get other people's disapproval. Disapproval can be anything from a frown to complete exclusion.

The first three sentences in the paragraph deal with what happens when people break a law. The rest tells what happens when a person doesn't follow a norm. The main idea of the paragraph is the difference between laws and norms.

Write: Write the main idea of the following paragraph. Use the strategy above.

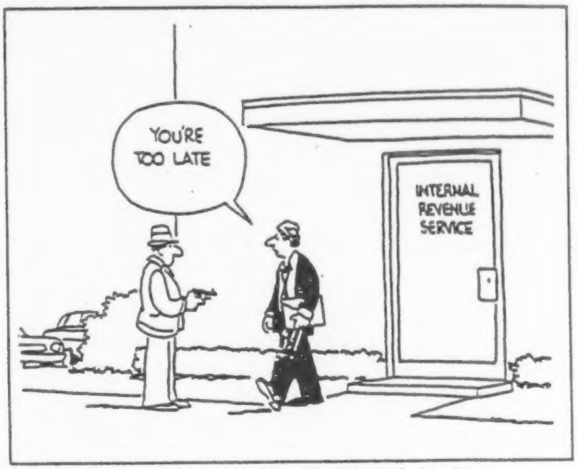
> Boys are expected and often encouraged to be noisy, aggressive, and adventurous. But if girls behave in the same way, most people will disapprove and call them "unladylike" or "tomboys." Girls are expected to be quiet, thoughtful and timid. But if boys behave in this way, they are teased and called "sissies."

____

____

The Unstated Main Idea

Sometimes a cartoonist expresses a point humorously. Study the cartoon below to find the hidden main idea.



Reprinted with permission of NAS, Inc. © 1988, North American Syndicate, Inc.

1. What best summarizes the cartoonist's message?

a. Thieves are everywhere.
b. The Internal Revenue Service (IRS) office is a hangout for robbers.
c. The Internal Revenue Service robs the America taxpaper.
d. Taxpayers leaving the IRS should beware of robbers.

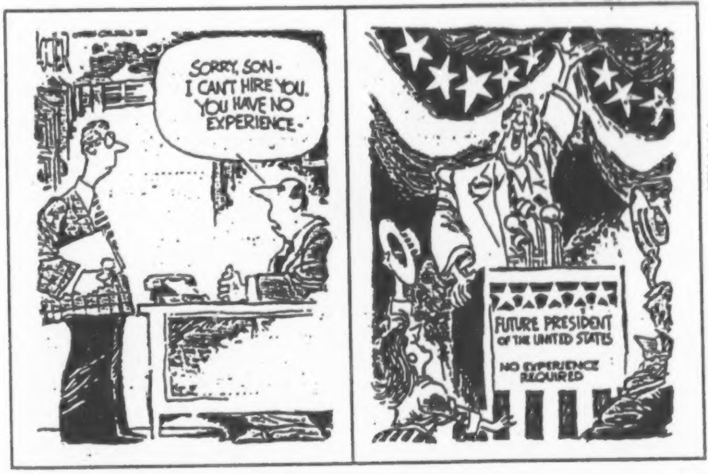
2. In the spaces below, put a check before the details that "add up" to the main idea.

a. A taxpayer has just settled with the IRS.
b. The taxpayer has money in his briefcase.
c. The taxpayer is being arrested for holding up the IRS.
d. The taxpayer is not afraid of the robber.
e. The gunman wants to kill the taxpayer.
f. The taxpayer did not receive a refund from the IRS.
g. The gunman is "sticking up" the taxpayer.

Martha J. Barnes, Reading and Critical Thinking in the Content Areas (Chicago: Contemporary Books, Inc., 1988) pp. 11, 15, 20-21.

Inferences

Study the cartoon below and answer the following questions.


SORRY, SON - I CAN'T HIRE YOU. YOU HAVE NO EXPERIENCE.
FUTURE PRESIDENT OF THE UNITED STATES
NO EXPERIENCE REQUIRED

1. Based on the information in the cartoon, you could infer that

   a. people without experience can't get entry-level jobs
   b. a double standard exists for ordinary citizens looking for a job and politicians running for president
   c. a president doesn't need experience because he has to hire other people to assist him in his work
   d. if no one had taken a chance on the president when he was hired for his first job, he might never have become president

2. From this cartoon, you could infer that the cartoonist would be most critical of which the following presidential candidates of 1988?

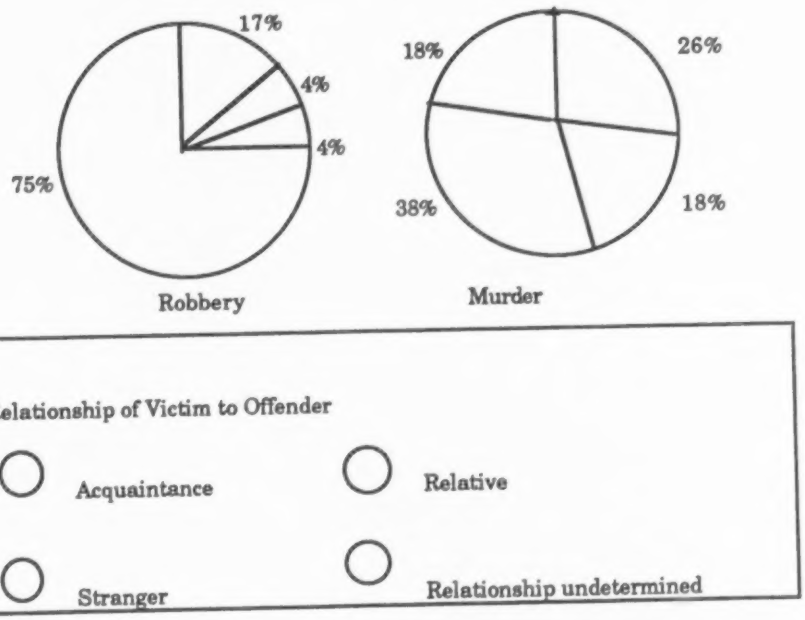
   a. George Bush, the vice president of the United States
   b. Pat Robertson, a religious leader
   c. Albert Gore, a U.S. senator from Tennessee
   d. Michael Dukakis, governor of Massachusetts

Conclusions from Facts

Study the pie graphs below. Then draw the conclusions that follow from the information provided.

Offenders and Victims

Recent crime statistics show that about one out of seven people in America has been the victim of a crime. These pie graphs provide information about two types of violent crimes and the relationships of the victim to the offender.



Adapted from graphs that appeared in the December 4, 1987, issues of *Scholastic Update.*

1. Answer the following questions based on the information included in the graphs.

a. What percentage of people are killed by strangers?________

b. What percentage of homicide victims know the people who kill them?________

c. What percentage of people are killed by relatives? ________

d. What percentage of victims know the people that rob them?______

2. Write *yes* before each statement that represents a conclusion that can be drawn from the facts provided in the graphs. Write *no* before each statement that cannot be based on the facts given.

_____a. Most robbery cases are not reported to the police.

_____b. Most victims of homicides know the people who kill them.

_____c. The percentage of people killed by strangers is the same as the percentage of people killed by relatives.

______d. More robberies are committed than any other violent crime.

______e. Most people do not know the people who rob them.

______f. Robberies rather than murders are more likely to be committed by strangers.

STRATEGIES FOR SUCCESS

DRAWING CONCLUSIONS

If you study the facts and read between the lines, you can get a lot of information from a paragraph or passage. You can use this information to draw your own conclusions.

STRATEGY: Think it through.

1. What are the facts?
2. What can you find out by reading between the lines?
3. What are your conclusions?

Example 1: What can you conclude about the advantages of the assembly line?

> Henry Ford became famous when he used the assembly line to make cars. He cut the time for building a car from 12 1/2 hours to 1 1/2 hours. The cost of a Ford dropped from $850 in 1908 to $400 in 1916.

From the facts that are given, you can conclude that the assembly line resulted in faster and cheaper production of cars.

Write: Read the above paragraph again. Then answer these questions. Use the strategy above.

1. What can you conclude about other goods made on an assembly line? Are they likely to be cheaper or more expensive than items made by one person?

2. What can you conclude about the number of cars made in 1916, compared to the number of cars made in 1908? Do you think the number increased or decreased? Why?

Judith Andrews Green, Social Studies: Strategies for Success (Austin: Steck-Vaughn Company, 1987) pp. 90-91.

Example 2: Look for facts in the passage below.

The law of supply and demand affects your family's buying power. When prices go up, your money buys less. When money loses its value for trading goods, there is *inflation*. For example, the same dollar that bought five loaves of bread twenty years ago can only buy one loaf of bread today.

If wages don't keep up with inflation, people can't buy as much. Business slows down, and people are laid off from their jobs. This is called a *recession*. If a recession goes on long enough, it turns into a *depression*. Banks and businesses close. Millions of people lose their jobs and their homes.

Among the facts in the passage above, you found some definitions:

Inflation: A time of high prices, when your money buys less.

Recession: A time when business slows down and layoffs occur.

Depression: A time when banks and businesses close.

Write: What are your conclusions? Answer these questions.

1. Have any of these three economic conditions occurred during your lifetime? How do you know?

____

____

____

2. Which is the worst: inflation, recession, or depression?

____

____

____

Predictions and Outcomes

Read the passage below, and answer the questions that follow.

The Insurance Game

Did you know that the job of certain people is to predict how long people will live? This prediction is based on data involving disease, sex, nutrition, and other information about the American population.

People who calculate life expectancy rates are called ***actuaries.*** Life expectancy is the length of time a person is expected to live. Actuaries put this information into tables, which insurance companies use to determine premiums. An insurance premium is the amount of money a customer pays on an insurance contract. Insurance companies are able to make profits because they take in more money in premiums that they must pay out in death claims.

In general, the younger a person is, the lower the premium will be. This is because most young people will live for quite a while longer, so that the insurance company will not have to pay many death claims for young people in any one year. The company is gambling that most young people will live through the year.

On the other hand, the older a person is, the higher the premium will be. The older people are, the more likely they are to die during the year. Therefore, the company will probably have to pay more claims on older people. The company is guessing that more old people will die during the year.

1. Based on the facts in the passage above, insurance might be compared to a
a. roll of the dice
b. lottery
c. betting game

2. Life insurance premiums for women usually are lower than those for men. This fact suggests that:
a. Women are healthier than men.
b. The number of women in the population is greater than the number of men.
c. Women generally live longer than men.

Martha J. Barnes, Reading and Critical Thinking in the Content Areas (Chicago: Contemporary Books, Inc. 1988) ppg. 27-29, 34-36.

3. Which of the following would most likely affect the premium that a person pays for life insurance?
a. race
b. health
c. place of residence

Study the table below and answer the questions that follow.

Life Expectancy

Age	Number of Years Left to Live	
(in 1980)	**Male**	**Female**
10	61.6	66.7
15	56.9	61.7
20	52.3	57.0
25	47.8	52.3
30	43.2	47.6
35	38.6	42.9
40	34.0	38.3
45	29.6	33.8
50	25.3	29.5
55	21.2	25.3
60	17.5	21.2
65	14.0	17.3

Based on the Insurance Commissioners 1980 Standard Ordinary Mortality Table.

4. Fill in each blank with the correct answer from the chart.

a. To what age are men expected to live who were 15 years old in 1980? ________
b. To what age are women expected to live who were 25 years old in 1980? ________
c. Men who were 40 years old in 1980 are expected to live how many years less than women born in the same year? ________
d. Women who were 50 years old in 1980 are expected to live how many years longer than men born the same year? ________

5. For each of the following statements, write *T* if the statement is true based on the information in the table. Write *F* if it is false.

a. The life expectancy of men is higher than the life expectancy of women.

b. Women who were 65 years old in 1980 were expected to live at least three years longer than men of the same age.

c. In 1980, young people's life expectancy was short.

d. Men who were 30 years old in 1980 can expect that most of them will live only until they are 61 years old.

THINK & WRITE: In some areas of the country, the life expectancy for infants is no better than that for poor, undeveloped Third World countries in Asia, Africa, and Latin America. What are some of the reasons for this?

Cause and Effect

Read the passage below, and complete the activity that follows.

"Cop-outs for Dropouts: Who's to Blame?"

In some urban communities, almost half of the ninth-graders drop out before they complete high school. Who's to blame for this high dropout rate?

-Many parents feel that the rate is high because of the shrinking numbers of dedicated teachers. Also, they complain that the teaching of basic skills is inadequate.

-Teachers, on the other hand, feel that education begins at home. They blame parents for not reinforcing what their children are learning in the classroom. If children are not supervised properly, teachers say, they will spend much of their time watching television or hanging out.

-Parents aren't the only ones being blamed for the high dropout rates. Teachers fault the school system for spending too much money on administrative concerns rather than in the classroom. Teachers feel that fewer dollars should go toward administrative services and more toward hiring, training, and paying teachers. Such improvements will result in smaller classes. With smaller classes, there will be more time for individual or small-group instruction.

-Many officials of the school system point the finger at the teachers and the government. They believe that most teachers aren't giving their all. Moreover, school officials blame the government for not putting more dollars for education in its budget.

-When you ask the victims of the dropout rate - the students themselves - you get a startling answer. They blame everybody except themselves! According to students, the high dropout rate can be blamed on the lack of parental support, peer group pressure, overcrowded classrooms, lack of individual attention from teachers, and the lack of dedicated teachers and administrators. The government doesn't escape blame either. Students feel that support from both the government and private industry might help solve the problem.

1. In a sentence, write the *effect* that the passages discusses.

Place a check before each cause that contributed to the effect you wrote above. You may check more than one.

2. According to parents, the causes are
   - ______a. the students themselves
   - ______b. gang activity
   - ______c. drugs among students
   - ______d. lack of dedicated teachers
   - ______e. inadequate teaching of basic skills

3. According to the teachers, the causes are
   - ______a. lack of support from parents
   - ______b. the teachers themselves
   - ______c. school administrators
   - ______d. private industry
   - ______e. peer group pressure

4. According to school administrators, the causes are
   - ______a. too little government funding
   - ______b. uncaring parents
   - ______c. unprepared and undedicated teachers
   - ______d. school administrators themselves
   - ______e. private industry

5. According to the students, the causes are
   - ______a. lack of discipline
   - ______b. peer group pressure
   - ______c. lack of parental support
   - ______d. overcrowded classes
   - ______e. a need to earn money by working

THINK & WRITE: "Copouts for Dropouts" suggests possible explanation for why many people drop out of school. Give one reason why you think there are so many dropouts. What do you think is a solution to this problem?

STRATEGIES FOR SUCCESS

CAUSE AND EFFECT

-Because it was well planned, the meeting went smoothly.
-He asked me to do it. So I did.
-You make me laugh!

These sentences show cause and effect. One thing happened. Then a second thing happened as a result. The first thing caused the second thing to happen. Cause and effect is one way written material can be organized.

When you study political science, you need to know the causes and effects of certain events.

STRATEGY: Reread the material for clues.

1. Some of the key words and phrases that show cause and effect are *so, therefore, as a result, because, make, result, cause, effect, reason*, and *if*.

2. Ask this question: Did the first thing really cause the second thing to happen?

Example 1: Look at the two paragraphs below. Which one is organized to show cause and effect?

A. Some people were afraid that the federal government might be given too much power. So the writers of the Constitution split the federal government into three branches.

B. Some of the amendments in the Bill of Rights gave people rights that we now take for granted. For example, we take for granted that we have the right to fair trial by jury.

The first paragraph shows cause and effect. The key word *so* helps you see a cause-and-effect relationship between the first and second sentences. *So* is not the only word that could be used here.

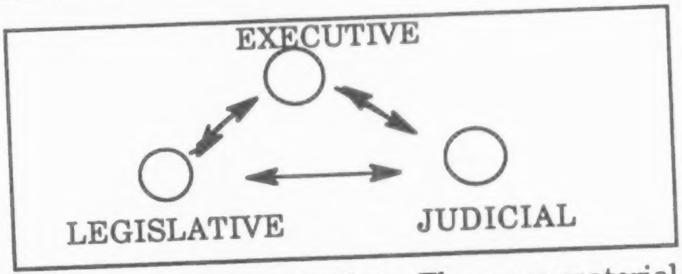
Judith Andrews Green, Social Studies: Strategies for Success (Austin: Steck-Vaughn Company, 1987) pp. 68-69.

Write: Rewrite paragraph A. Use one of these words or phrases in place of the word *so*: *As a result, Therefore, Consequently.*

Example 2: Do the following paragraphs show cause and effect?

A. Because no one wanted one branch of the federal government to have too much control, a system of checks and balances was developed.

B. No one wanted one branch of the federal government to have too much control. As a result, a system of checks and balances was developed.



Both versions show cause and effect. The same material can be presented different ways, with different key words.

Write: Join these two sentences. Use the key words *because, as a result, so,* or *therefore* to show cause and effect.

1) The Constitution was carefully written.
2) It is still a useful plan of government today.

Sequence

The passage below traces the history of drug use. It follows a sequence pattern. Read the passage. Then complete the activity that follows.

Drug Use and Abuse Are Not New

If you think that the use of certain illegal drugs began in your lifetime, you are wrong. At least two drugs have been used by humans since prehistoric times.

Marijuana, for example, has been traced as far back as 2700 B.C. However, the widespread smoking of the drug didn't begin in the United States until after World War I. Fifty years later, during the 1960s, the drug was used by the "hippie generation." It was a symbol of their rejection of society's values. It is interesting that today the drug is said to have value in medicine. Some say it helps to counteract the side effects of chemotherapy. However, it is also known to impair memory and affect coordination. Many critics see marijuana as a stepping stone to hard drugs.

Opium was known to the Egyptians as early as 1500 BC. It is derived from the juice of the poppy plant. It has been used as a painkiller since the 1700s. Over the years, doctors have prescribed it to relive the pain of cancer, toothache, gallstones, and childbirth.

Despite its widespread uses as a painkiller, opium's addictive powers weren't suspected until its refined products, morphine and codeine, were discovered. Morphine was discovered in 1805, and codeine in 1832. During the Civil War, morphine and codeine were often injected painkillers.

Heroin is another opium product. It was discovered in 1893. In the United States, heroin is illegal even for medical purposes. In England, however, it is legal and often prescribed as a painkiller. Though often portrayed as the most dangerous of all drugs, its effects are not that different from those of morphine, an accepted drug. However, as an addicitve drug, heroin has few rivals. Heroin addiction has cut short the lives of a number of entertainers including Billie Holiday, Janis Joplin, and Jimi Hendrix.

Cocaine, another powerful drug, comes from the leaves of the coca plant. It has been grown and used in South America for hundreds of years. Coca, however, didn't become popular in Europe and the United States until the late 1800s. At that time it was used widely in tonics and beverages such as Coca-Cola. During the same time, cocaine became the first local anesthetic to be used during surgery. It was used mainly for eye operations.

Martha J. Barnes, Reading and Critical Thinking in the Content Areas (Chicago: Contemporary Books, Inc., 1988) pp. 42-44.

Cocaine became an abused drug when doctors started prescribing it for a variety of medical problems. Widespread cocaine addition resulted in laws being passed against its use. In the early 1900s, cocaine was removed from Coca-Cola, tonics, and other products. However, cocaine use skyrocketed to an alarming degree during the 1980s. Today it is one of the most destructive drugs.

1. Based on the passage, match the events on the left with the date listed on the right by writing the correct date in the space provided. One is done for you.

1800s a. cocaine first popularized
_____b. cocaine use skyrockets
_____c. morphine discovered
_____d. marijuana popularized
_____e. heroin discovered
_____f. codeine discovered
_____g. coca removed from Coca-Cola and other tonics
_____h. date marijuana can be traced to
_____i. opium used by Egyptians
_____j. opium used as a painkiller

1900s
1960s
2700 B.C.
1500 B.C.
1700s
1893
1805
1980s
1832
1800s

2. Write *T* in the space if the statement is true, based on the information in the passage. Write *F* if it is false.

_____a. Drugs have a history of being used in medicine.
_____b. Some drugs are known to be addictive.
_____c. Marijuana has no known medicinal properties.
_____d. Most drugs are derived from growing plants.
_____e. England uses heroin as a painkiller more freely than does the United States.

THINK & WRITE: Do you think that certain illegal drugs that have medicinal uses should be declared legal? Why or why not?

STRATEGIES FOR SUCCESS

CHRONOLOGICAL ORDER

When you study history, you need to be aware of what happens and when it happens. Test questions sometimes ask if an event happened before or after something else. You need to be able to recognize the chronological order of events.

STRATEGY 1: Look for key words and phrases.

1. Look for GENERAL time clues, words that name days (Tuesday), dates (April 2), years (1836), or times (12:00 noon).

Example: Read the following paragraph. What key words or phrases show you that it is organized in chronological order?

In 1492, Christopher Columbus began his first trip across the Atlantic Ocean in search of India. After that first trip, he went back three more times. When he died in 1505, he still had not found India. It wasn't until much later that people realized the importance of his discoveries.

The paragraph has several time clues. The general ones are after, when, and much later. The specific ones are 1492 and 1505.

Write: Columbus's other three trips were in 1493, 1498, and 1502. Write a paragraph about all four of his trips. Put events in chronological order. Use general and specific time clues.

Judith Andrews Green, Social Studies: Strategies for Success (Austin: Steck-Vaughn Company, 1987) pp. 46-47.

STRATEGY 2: Look for key events or actions.

1. Are they listed in the order they happened?
2. Or are they listed in the order they should happen?

Example: Chronological order is used when the writer wants to tell the order in which things happened - or the order in which they should happen. Which of the following items is in chronological order, A or B?

A. There are two reasons Europeans wanted to find a sea route to India:
   1) They needed India's silk, jewels, and other goods.
   2) They thought that land travel took too long.

B. For seven years, Columbus tried to find someone to pay for his trips:
   1) He asked John II of Portugal.
   2) He wrote to Henry VI of England.
   3) He met with Spain's Queen Isabella.

B is written in chronological order. Events are listed in the order that they happened.

Write: Rewrite item B so that it is a paragraph. Instead of numbering the events, begin each sentence with a key word such as first, then, after, or finally.

____

____

____

____

____

____

____

Comparison and Contrast

Read the passage below, and answer the questions that follow.

Worlds Apart

For 25-year-old Pieter, who lives in Johannesburg, South Africa, being able to vote in the presidential election is no big deal. After all, the privilege to vote was part of his birthright.

However, just a few miles away of the outskirts of Johannesburg lives 25-year-old Simon. For him the right to vote in a national election is a dream. In fact, the only elections in which Simon can participate are the council elections in his all-black township.

Pieter and Simon are two men living in the same country. Yet, because of the government policy of apartheid, they live in separate worlds.

The South African government separates its people into four main groups: blacks, white, coloreds, and Asians. Blacks, the largest group, include about 25 million people, making up 75 percent of South Africa's populations. Whites, the second largest group, make up nearly 14 percent (5 million). Coloreds (those of mixed parentage) comprise 9 percent (about 3 million). Finally, Asians make up a mere 3 percent (1 million).

Although Simon is a member of the largest ethnic group, he is forced to live in a poor, all black area, while Pieter lives in a house in the city complete with indoor plumbing and electricity.

In addition to different living conditions, Simon and Pieter receive different wages even though they work at the same mine. Simon is paid $200 a month as a laborer, compared to Pieter's $200 a week as a foreman.

Another difference between Simon and Pieter is their educational background. About 30 percent of people like Simon can read and write, contrasted to nearly 90 percent of South African whites. Trailing the literacy level of whites, but still far above that of blacks, are the Asians (69 percent) and the coloreds (62 percent).

What accounts for the high illiteracy rate among blacks in South Africa? Simon blames the nation's government. It spends an average of $186 yearly for the education of each black student compared to $1,095 for each white. The amount allotted for educating the black student also is less than the $563 spent on the Asian student and the $414 spent on the colored.

Martha J. Barnes, Reading and Critical Thinking in the Content Areas (Chicago: Contemporary Books, Inc., 1988) pp. 46-48, 72-73, 79, 82-83, 97-99.

1. List three key similarities between Simon and Pieter.

a. ____
b. ____
c. ____

2. List the differences between Simon and Pieter.

Simon	Pieter
a. ________________	a. ________________
b. ________________	b. ________________
c. ________________	c. ________________
d. ________________	d. ________________
e. ________________	e. ________________

3. From highest to lowest, rank the groups according to total population, literacy level, and the amount of money spent on education for blacks, whites, Asians, and coloreds. One is done for you.

	Highest			Lowest
Percent of population	Blacks	______	______	______
Literacy level	______	______	______	______
Money spent on education	______	______	______	______

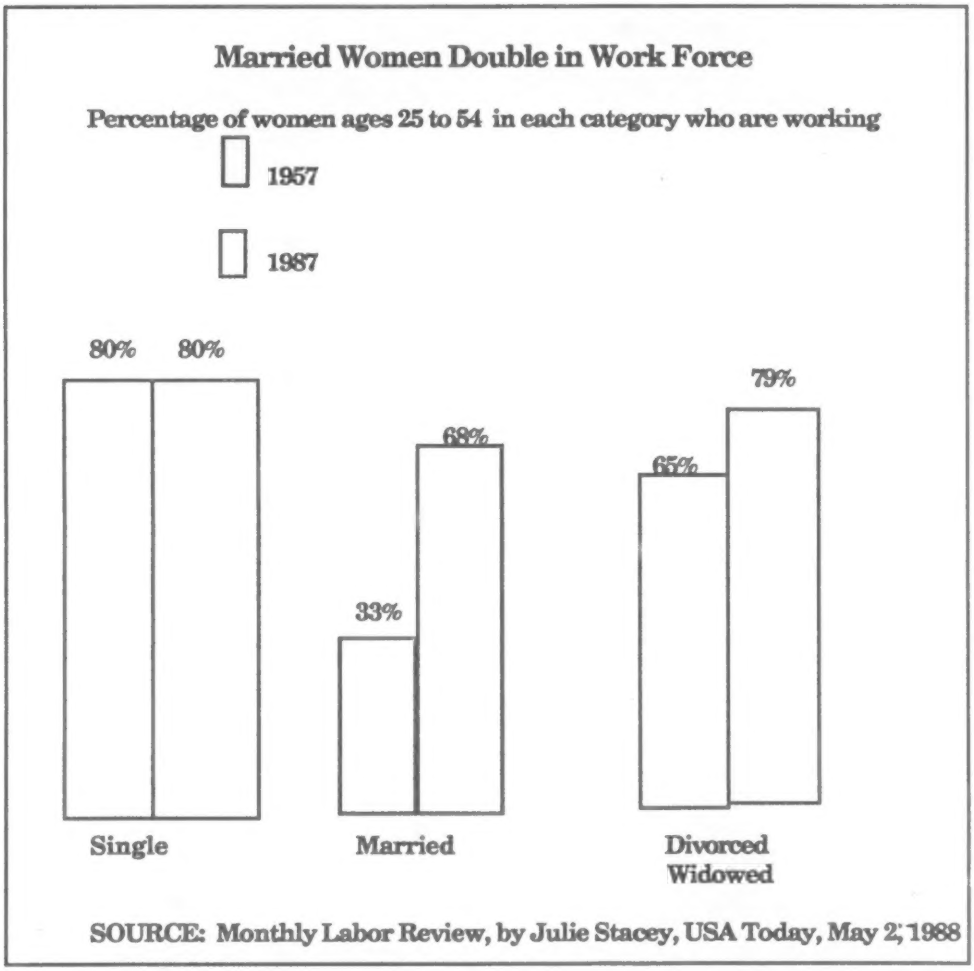
4. List five words or phrases from the passage that signal differences.

a. ____________________________
b. ____________________________
c. ____________________________
d. ____________________________
e. ____________________________

Invalid Conclusions

You have practiced identifying faulty logic in a written passage. In this lesson, you will demonstrate your ability to recognize invalid conclusions based on illustrated material. You probably have seen illustrated materials such as graphs and charts used to make a point. In many instances, though, it is not the information presented in the visuals that is questionable. It is the way the information is interpreted that causes errors in reasoning.

Based on the information presented in the graph, decide whether or not each of the following statements is a valid or invalid conclusion. If the statement is valid, write *V* on the line. If it is invalid, write *I*.



Married Women Double in Work Force

Percentage of women ages 25 to 54 in each category who are working

SOURCE: Monthly Labor Review, by Julie Stacey, USA Today, May 2, 1988

_____1. The graph shows that in 1987 more than twice as many married women had jobs as they had in 1957.

_____2. More married women are working because they want to prove that they can "do it all."

_____3. The trend among the number of single women in the work force has remained the same within a 30-year period.

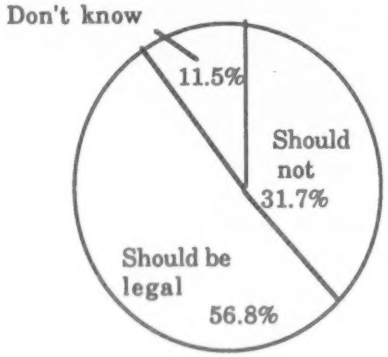
_____4. More divorced women are working now than 30 years ago because alimony and child support payments are unenforceable.

_____5. In 1987, 11 percent more divorced and widowed women were working than married women.

_____6. The united States has become primarily a two-income-family nation within the past 30 years.

Values

A recent survey of 509 lawyers in 1988 found that more than half believe that the administration of a lethal (deadly) injection to terminally ill patients should be legal. The following pie graph shows the results of the survey. Study the graph and answer the questions that follow.



Should Mercy Killing Be Legal?

SOURCE: ABA Journal by John Sherlock, USA Today, June 2, 1988

1. The information in the survey may not be a reliable representation of lawyers' opinions because it is not clear

a. whether a majority opinion is shown
b. whether they represent a geographic cross-section of the United States
c. how long they have been practicing law

2. The graph shows that even if the percentage of lawyers who responded "Don't Know" is added to the percentage that opposes legalizing mercy killing, the majority of the 509 lawyers

a. approve legalizing mercy killing
b. oppose legalizing mercy killing
c. have no clear-cut position on this issue

3. In deciding whether or not to legalize mercy killing, the opinion of which type of lawyer would probably carry the least weight?

a. specialist in criminal law
b. specialist in civil law
c. specialist in real estate law

THINK & WRITE: Should doctors have the right to help terminally ill patients die?

Fact, Opinion, and Hypothesis

Read the passage below and answer the questions that follow.

It is 3:30. Do You Know Where Your Child Is?

Many parents do know, and they aren't all that satisfied about it. Take Rose and Curt, for example. They have to pay a retired nurse $100 a week to pick up their six-year-old child from school and care for him until they get home. Helen, a single parent, can barely afford to pay $40 a week to an elderly woman who cares for five other children in her small apartment.

The child-care crisis in America has turned into one of the hottest social issues of the 1980s. But is there really a crisis? Yes, if you are a working parent who cannot afford adequate child care.

Many critics of America's child care policies have voiced their opinions on this issue. Some support the Swedish model of a government-funded day-care center on every corner. Others like Ed Ziegler, the psychologist who helped launch Project Head Start during the 1970s, feels that the best solution to the child-care crisis lies in the hands of the school system. According to Ziegler, the school should be thought of as a building, not as an institution. He feels that the schools should open earlier in the morning and stay open later in the afternoon. In addition, they should be staffed with child development associates to serve children of working parents.

Ziegler targeted the before-and-after-school child-care concept because he believes that the biggest part of the child-care problem is actually school-aged children. He reports that there may be as many as 5 million children who go home to empty houses after school. These so-called latchkey children make up more than 50 percent of the children needing child care. According to Ziegler, this would be the easiest part of the problem to solve.

Keeping the schools open would not only solve the problem of latchkey children. It might also reduce other social problems related to the improper care of children.

Based on the information in the passage, write F if the statement is a fact, O if it is an opinon, and H if it is a hypothesis.

____1. The Swedish government funds a day care center on every street.

____2. The Swedish government cares more about its children than the U.S. government cares about ours.

____3. If the school systems in America would use their buildings as child-care centers, more parents would attend P.T.A. meetings.

4. American taxpayers should support adequate child care for all citizens.

5. What Ed Ziegler proposes would cost too much money.

Analogy

The passage below uses analogy to show the relationship between two different ideas. Read the passage, and answer the questions that follow.

Impeaching a President

Impeaching a president is like [performing] major surgery. It is an act that should not be done hastily or emotionally, and only when it is necessary to restore the well-being of the patient, in this case the government of the nation. The purpose of the surgery is not to punish the diseased organ; neither is the purpose of impeachment to punish a president. In both situations the only legitimate purpose is to remove a source of serious trouble and reestablish a healthy condition.

A surgeon does not initiate the decision to operate. Before he [or she] has been called onto the case, the patient has been examined by a physician who must satisfy himself by the evidence of laboratory tests and x-rays that an operation may be necessary. When the surgeon is consulted, he [or she] reviews the evidence and makes the final decision. A similar procedure is followed in impeachment. The House first studies the question, seeks all pertinent evidence, and then decides whether the matter should go to the Senate. The Senate reviews the evidence and makes the final decision. The whole process of deciding what to do in either surgery or impeachment may take several months.

Both surgery and impeachment are periods of stress for everybody involved. And just as the patient may suffer post-surgical shock, so may the political body suffer from the shock of impeachment. In view of the possible consequences, neither action should be undertaken unless there is no satisfactory alternative. But when the patient's health depends on cutting out the source of the infection, failure to act, in both surgery and impeachment, may have serious consequences.

1. *Impeachment* is to *presidency* as surgery is to __________.

   a. illness
   b. patient
   c. organ

2. List five ways in which impeachment and surgery are alike.

   a ____
   b ____
   c ____
   d ____
   e ____

3. *Surgeon* is to *operation* as *Senate* is to

   a. government
   b. impeachment
   c. presidency

4. House of Representatives is to the impeachment decision as ____________ is to the operating decision.

   a. president
   b. physician
   c. surgeon

5. Is the comparison between impeaching a president and performing major surgery sound? Why or why not?
   ____

Read the unsound analogies below, tell what two ideas are being compared, and explain why the analogies are unsound.

6. How can the candidate run the city effectively when he can't even remember to pay his gas bill?

Ideas being compared: ______________________________

The analogy is unsound because ______________________________

7. If the average American family must live within its means, so should the U.S. government. Then we wouldn't be faced with such a high budget deficit.

Ideas being compared: ______________________________

The analogy is unsound because ______________________________

____

PRACTICE

Directions: The PRACTICE is made up of 35 questions from economics, geography, political science, history and behavioral science. It will give you an idea of topics in social studies and of social studies reading skills.

There are three types of questions. Some follow a short reading passage. Read each passage and answer the questions based on what you read. Other questions stand alone. To answer these questions, you have to use your own experience or prior knowledge. The third type of question comes after a cartoon, a graph or a chart. Answer these questions based on what you understand from looking at the cartoon, graph or chart.

There is no time limit. If you don't know answer, try to figure it out. You can even guess at some answers. Read all five choices. Then put a check mark (✓) next to the BEST answer for each question.

Some experts think that intelligence comes mostly from what you inherit from your parents. Others think it develops from your experiences in life. This difference has been called the "nature" versus "nurture" question. There is a great debate about just what is caused by heredity and what comes from what we learn growing up.

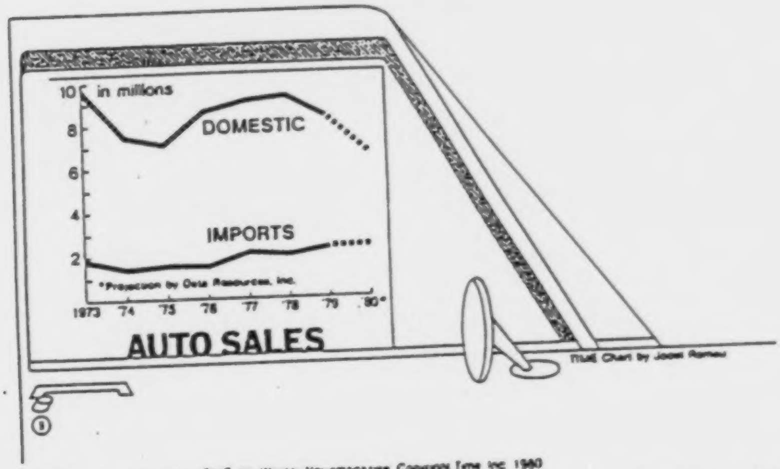
People who support the "nature" side say that heredity is the main key to intelligence. They feel that no amount of teaching could make an Albert Einstein or a Paul Robeson. One must be born with the ability to learn science or music and other areas as these men did. According to the "nature" side of the debate, the genes control the level a person can reach. The "nurture" side believes that intelligence is changed by a person's environment, experiences and surroundings. They say that a person with great intelligence must have been exposed to the right things to cause that growth. They see the mind at birth as a blank page. It can be filled in by those experiences which lead to learning. The environment or "nurture" side of the debate states that life experiences, education and training are the key.

Lillian J. Fleming, Editorial Director, Building Basics in Social Studies (Chicago: Contemporary Books, Inc., 1982) pp. 1-16.

Many psychologists take a balanced view. They say that both factors are important. Together, heredity and environment - "nature" and "nurture" - can affect what a person is able to do in life.

1. "Nature" as used in this passage means
   (1) wild animals and plants
   (2) a person's basic character
   (3) learning ability
   (4) heredity
   (5) environment

2. Which idea from the passage might lead parents to send their children to pre-school?
   (1) there is a great debate about the role of heredity and environment
   (2) the right experiences can increase intelligence
   (3) no amount of teaching could make an Einstein or a Robeson
   (4) genes control the level one can reach
   (5) psychologists take a balanced view



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3. If the trend goes on as the chart suggests, we may expect that
   (1) we will see more foreign cars on the highways
   (2) American car dealers will make more money
   (3) fewer cars will be imported in coming years
   (4) more American cars will be made
   (5) the total number of cars sold will increase

4. The total dollar value of all goods and services produced in the nation in a given year is called
(1) the Dow Jones Index
(2) the Gross National Product
(3) the Consumer Price Index
(4) the money balance
(5) supply and demand

5. Central American is an isthmus. This means that it
(1) has a canal zone
(2) includes many countries
(3) is a large body of land completely surrounded by water
(4) has many trees and other plants
(5) is a narrow strip of land joining two larger land areas

The main job of the Congress of the Untied States is to make laws. Congress is made up of the Senate and the House of Representatives. Both chambers or bodies are part of the law-making process. But some jobs have to be done by one chamber alone. This is stated in the Constitution. For example, the House of Representatives must bring up all bills to spend money. It is a job of the Senate to approve or reject these bills. The House of Representatives must also approve or reject bills started in the Senate.

The Senate, the higher chamber, has two senators from each state. They serve six-year terms. Their terms end in different years so that one-third of the Senate runs for re-election every two years.

A candidate for the Senate must be at least 30 years old. The candidate must be a legal resident of the state where he or she is running. This person must have been a U.S. citizen for at least nine years.

Membership in the House, the lower chamber, is based on state population. Each state has at least one representative, and the large states have many. California, for instance, has 38. When a state's representatives work together their state has a strong voice in Congress.

To run for the House, a person must be at least 25 years old, a citizen for at least seven years, and a resident of the state in which elected.

Each member of Congress has two roles. On the one hand the member must meet the needs of his or her own state. But, on the other hand, he or she must work for the good of the whole nation.

6. The passage says that a senator
   (1) may not run for re-election
   (2) serves a six-year term
   (3) is also a representative
   (4) must be at least 25 years old
   (5) cannot have been born in a foreign country

7. The fact that the House is called the lower chamber implies that
   (1) it has fewer members than the Senate
   (2) its members make no important laws
   (3) its members have less power than senators
   (4) the chamber is often located below the upper chamber
   (5) its members have shorter terms than senators

8. Judging from the passage, you should vote for a candidate who
   (1) is a loyal party member
   (2) is older than 25
   (3) supports local views only
   (4) has money
   (5) knows about national concerns

9. According to the passage, which of the following states will have the fewest representatives in the House, or lower chamber?
   (1) California
   (2) Illinois
   (3) Alaska
   (4) New York
   (5) Michigan

10. Which of the following did NOT have to do with slavery in America?
   (1) the Boston Tea Party
   (2) the Missouri Compromise
   (3) the Dred Scott Decision
   (4) The Abolition Movement
   (5) the Civil War

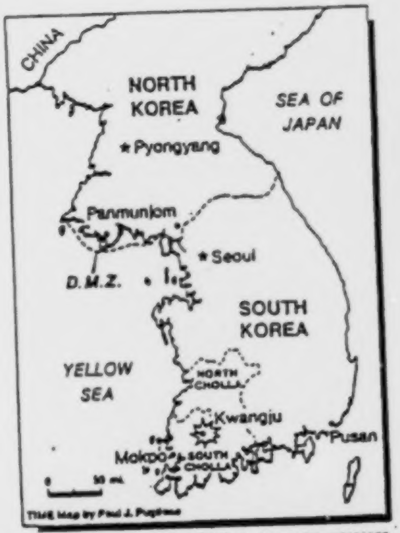
We often hear people using the words personality and character. Many people think they are one and the same. Actually they are quite different. Personality can be thought of as the way one appears to others or "comes across." It reflects how a person feels toward and gets along with other people.

Character, on the other hand, has to do with a person's outlook on life. It is a measure of moral traits or what a person believes is right and wrong. Beliefs and attitudes rest in one's character, no matter what the personality may suggest. A shy person may have a clear sense of right and wrong and thus have strong character. In contrast, a friendly person may be self-assured when meeting new people. The same person may feel unsure about right and wrong.

11. The writer says that character
    (1) is not as important as personality
    (2) has mostly to do with feelings
    (3) cannot be changed
    (4) is based on moral beliefs
    (5) is the same as personality

12. A course on "How to Win Friends and Influence People" would be likely to
    (1) help strengthen one's values
    (2) help develop one's personality
    (3) help a person know his own beliefs
    (4) help improve one's outlook on life
    (5) help build character

13. A government raises the price of its imported steel to equal the price of its domestic steel. This is called a (n)
    (1) sales tax
    (2) competitive tariff
    (3) negative income tax
    (4) embargo
    (5) deferred payment


CHINA
NORTH KOREA
SEA OF JAPAN
Pyongyang
Panmunjom
Seoul
D.M.Z.
SOUTH KOREA
YELLOW SEA
NORTH CHOLLA
Kwangju
Pusan
Mokpo
SOUTH CHOLLA
0
50 mi.
TIME Map by Paul J. Pugliese

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14. The map shows that the two Korean capitals are
    (1) the same distance from China
    (2) both in the demilitarized zone (D.M.Z.)
    (3) about 1500 miles apart
    (4) less than 200 miles apart
    (5) south of the Yellow Sea

Mexico had a well-developed culture long before Columbus came to the New World. Today, much of Mexico shows a Spanish influence. This is because the early explorers forced their culture on the native Indians living there. But even though the Spanish conquered the Indians, Indian culture survived. Today, Mexico is a blend of Spanish and Indian ways.

The Spanish language is used by most people. It is colored by many Indian words. About 50 Indian languages, including Mayan and Aztec, are still spoken.

The contrasts between the two cultures can still be seen in Mexico. But now in Mexico's busy cities there are also modern skyscrapers, businesses, stores and many cars. It is not odd to see a modern apartment building crowding out a beautiful old Spanish church or early Indian ruins. Somehow, the new building cannot quite capture the richness of the old. Progress and technical advances are happening in Mexico. Hopefully, they will not destroy the rich Indian and Spanish heritage of the country.

15. The language most used in Mexico is
    (1) a mix of Indian languages
    (2) English with Spanish words
    (3) a language used before Columbus came to the New World
    (4) Spanish with Indian words added
    (5) Aztec and Mayan

16. From the passage, the reader might think that Mexican culture
    (1) has kept nothing from the days before the Spanish
    (2) has fewer problems than other cultures
    (3) could be spoiled by technical change and modern advances
    (4) is the same as that of Spain
    (5) is controlled by the government

17. Judging by Mexico's history, a well-developed culture
    (1) survives even when other cultures are forced on the nation
    (2) will have old churches and Indian ruins
    (3) will not accept new ideas
    (4) is more quickly changed by other groups
    (5) needs many languages

18. A peer group is
    (1) mass actions in a culture
    (2) a religious club or cult
    (3) all the people of a nation
    (4) persons who have political power
    (5) persons alike in age, grade or status

Although it happened half a century ago, stories are still told about Wall Street's crash in 1929. The nation had been through financial scares before, but nothing to match the "Great Depression." The collapse came in late October, 1929. The depression was the major event of the 1930s.

No single cause led to the stock market fall. The day it happened is now called "black Tuesday." Some people tried to blame the president. But Herbert Hoover was not at fault for the tragic event. It involved many economic factors such as production, wages, loans and trade.

The United States was not alone in the hard years that followed the stock market crash. Great Britain, too, went through business problems and failures. By 1931, the depression had become so severe in Europe that world trade has almost stopped.

In the presidential election of 1932, the American voters expressed their desire for change. They elected Franklin D. Roosevelt. F.D.R. promised America a "New Deal." Banking and investment reforms were part of the New Deal. The New Deal also included controls over how much factories produced and laws to protect consumers. The Social Security program and minimum wage standards began during the New Deal.

The election of 1932 helped Americans to gain new faith in themselves. Slowly the economy improved. As people began to have more hope for the future they spent more money. Business increased and more people found jobs. Banks once more began making loans and recovery was on the way.

19. This passage is mainly about
    (1) the Great Depression and America's recovery
    (2) the start of the Social Security program
    (3) the many causes of economic problems
    (4) the need for a strong leader
    (5) the importance of the "new Deal"

20. The "New Deal" was
    (1) Roosevelt's plan for dealing with the depression
    (2) a new trade agreement with Europe
    (3) a new election system
    (4) a set of price controls to give a better deal on goods
    (5) Hoover's set of rules which caused the stock market crash

21. The passage suggests that the U.S. economy
(1) has to do with production and wages only
(2) is not affected by world events
(3) always protected consumers
(4) should stay away from world trade
(5) is related to political leadership and confidence

A referendum is a question placed on the ballot after legislators have passed it. It then becomes an issue for the people's vote. This is done when the question is one of broad concern, such as that of changing a state constitution. In this case, the citizens of a state get to vote on a change in their basic law. If a referendum is an amendment to a state constitution, a two-thirds majority vote is usually needed for it to pass. This helps to prevent a small group or a private interest from making changes not wanted by the public.

22. A referendum is
(1) an issue decided by direct popular vote
(2) an amendment to a state constitution
(3) the same as an election
(4) a two-thirds majority vote
(5) needs of a private interest group

23. Which of the following would most likely be a referendum question?
(1) Should a political rally be held?
(2) Should the federal budget be balanced?
(3) Should the number of members of the state senate change?
(4) Should the president be impeached?
(5) Should Congress adjourn early?

The Consumer Price Index (C.P.I.) measures changes in the cost of living. The percent of a worker's pay that is needed to buy certain goods is figured. This percent is compared with the percent of a person's wages needed to buy the same goods in the past. For example, if you hear that the Consumer Price Index for food has gone up, you know that people are paying a larger share of their earnings for food than they were in the past.

24. If the cost of food, clothing, housing and transportation rises over a 10-year period, but the C.P.I. stays the same, you may conclude that

(1) inflation has cut down the value of the dollar
(2) the consumer must work longer for each item bought
(3) prices have changed at about the same rate as wages
(4) goods cost less now than they did ten years ago
(5) too many goods are being produced for consumer needs

25. "Lame duck" sessions in Congress occur

(1) before an election
(2) after an election
(3) when the president is absent
(4) when there aren't enough congressmen for a vote
(5) after a bill is vetoed

Climate is very important in deciding where and how people live. Most of the world's people live where temperatures aren't too hot or too cold, where there is plenty of rain and where soil is good for growing food. But people also live where the climate is very harsh. One approach to geography is to study the climate zones of the world and how climate affects human beings.

One climate zone is the tropical dry lands. In this zone, the weather is hot and dry. This is desert land that has little plant and wildlife. Life in these regions of the world is harsh. Such areas have given rise to a nomadic life-style. Nomads are groups of people that wander from place to place in search of food and water instead of settling in one place. Tropical dry lands are found in Asia, northern Africa, and the southwest part of the United States, Mexico, Peru, Chile and Australia. The Sahara Desert in northern Africa is the largest single area of dry land. It covers about three million square miles.

In contrast to the tropical dry lands, the sunny semi-tropical zone is comfortable. The areas around the Mediterranean Sea and the California coastline are examples. These areas have a pleasant climate where fruit can be grown. People enjoy life in these zones and so the populations are usually large.

The polar zones are the coldest parts of the earth. There are two types of polar climate. The tundra regions have some plant life. The extreme northern parts of North America, Europe and Asia have tundra regions. The polar ice-cap regions, on the other hand, have freezing temperatures year-round and no plant life. Ice-capped Antarctica is a polar land where there is ice and snow all year long.

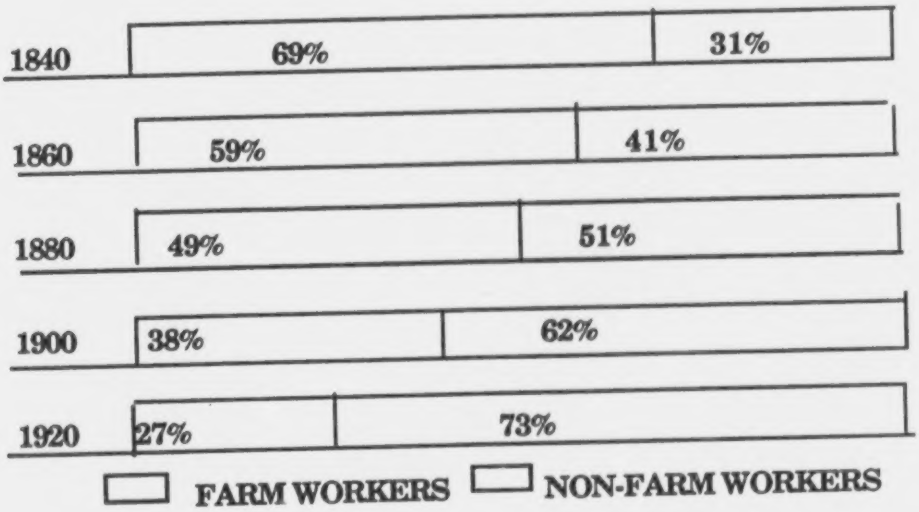
26. The main idea of this passage is
   (1) geography is the study of climate
   (2) people like tropical dry lands better than polar areas
   (3) climate affects where and how people live
   (4) there are more dry than wet climate zones
   (5) nomads live where climate is harsh

27. Climate is
   (1) how hot or cold a region is
   (2) the amount of plant and wildlife in an area
   (3) the number of people living in a place
   (4) the weather pattern of a region
   (5) the rain or lack of rain in a certain zone

28. The tundra region
   (1) is part of the polar ice cap
   (2) is probably thinly populated
   (3) is part of the desert
   (4) is one of the semi-tropical zones
   (5) is in the southern United States

The Industrial Revolution caused many changes in the United States. The promise of work and of profits brought many farm people into the cities. Urban areas grew, while the number of farms fell. America's life-style moved away from what is called subsistence farming. People began to depend on money and a cash economy. They wanted to earn money and to have enough to buy the goods that the modern technology of the Industrial Revolution could produce. The graph shows that percent of farm and non-farm workers in the United States between 1840 and 1920.

DECLINING NUMBER OF FARM WORKERS 1840-1920



29. From 1840 to 1920, the number of non-farm workers for each twenty years grew about
    - (1) 10 percent
    - (2) 31 percent
    - (3) 69 percent
    - (4) 73 percent
    - (5) 100 percent

30. The ratio of farm to non-farm workers in 1840 and 1920 was
    - (1) twice as many farm workers by 1920
    - (2) about the same numbers both years
    - (3) about opposite for the two years, with non-farm workers increasing
    - (4) 73% more non-farm than farm workers by 1920
    - (5) about one-fourth as many farm workers in 1920 as there were in 1840

31. Subsistence farming means
   (1) farming to produce one's own food
   (2) using large farms
   (3) depending on cash to run a farm
   (4) farming based on technology
   (5) avoiding urban regions

The United States Constitution was written 1787. It sets the basic principles of our government. Amendments, or changes, make it possible for the Constitution to meet needs that come up as society grows. An amendment becomes part of the Constitution when it is passed by Congress and by three-fourths of the states.

The first ten amendments to the Constitution were called the Bill of Rights. These protect people against wrongs which could come from bad government rule. They limit the power of the nation's government to make laws which could destroy states' rights or deny the freedom of individuals. The Bill of Rights assures freedom of speech, the right to privacy, and the right to jury trials, among other rights.

32. According to the passage, one might expect that
   (1) the Constitution may soon be replaced as our basic law
   (2) the Constitution will continue to be our basic law
   (3) the Constitution will not need any more amendments
   (4) the U.S. government will come to depend less on the Constitution
   (5) some states will refuse to obey the Constitution

33. The Bill of Rights is the name for
   (1) all Constitutional amendments
   (2) laws that deal with the court system
   (3) the first ten amendments to the U.S. Constitution
   (4) America's first set of laws
   (5) the Declaration of Independence

A corporation is a group of people licensed to act as one legal body. It can do business in its own name, enter into contracts and earn profits. It may own property and it may sue or be sued as a result of its acts. Since a corporation is collectively owned, however, no one member can be forced to pay its debts. In short, a corporation may do anything that one person may legally do but it protects its members form total financial responsibility.

34. If you were to start a for-profit corporation, one advantage you could expect would be
(1) your own personal money would be safer
(2) the corporation would not have to pay taxes
(3) you would be more likely to make a profit
(4) the corporation could not go bankrupt
(5) the corporation would be protected form lawsuits

35. During the American Bicentennial in 1976, America celebrated
(1) the date of the first Constitutional Convention
(2) the end of World War II
(3) the first Veteran's Day
(4) 100 years without war
(5) its 200th birthday

Answer Key

CHAPTER 1: WHAT IS THE MESSAGE?

Stated Main Idea

Rosa Parks Sparks Boycott

WHO: Rosa Parks
WHAT: sparked the Montgomery bus boycott
WHERE: Montgomery, Alabama
WHEN: December 1, 1955
HOW: by refusing to give up her seat

MAIN IDEA SENTENCE: On December 1, 1955, Rosa Parks sparked the Montgomery bus boycott in Montgomery, Alabama, by refusing to give up her seat.

Tired Hearts

1. e The facts in the passage state that, after a triathlon, the heart did not contract as well with each beat. However, 24 hours later, the heart worked normally. This points to the main idea that an overworked heart does not work at peak levels.
2. a The reliability of the sports researchers has nothing to do with the way the heart works. All of the other choices are related to the working of the heart.

Poor Girl

1. c The lines "You've got another love" and "If I try to tell her what I know/She'll misunderstand and make me go" suggest that the speaker wants to give advice to her former boyfriend's new girlfriend but is hesitant to do so.
2. b The words *poor girl* suggest pity. A person who is sympathetic to another, and who wants to advise her, would feel pity, not fear or innocence.

The Unstated Main Idea

Résumé

1. c The poem describes the effects of different ways of killing yourself. It ends with the statement: "You might as well live." This indicates that the poem is about suicide.
2. c The poet shows that each of the seven ways of committing suicide has negative effects. This suggests that living is a better choice and that suicide is more trouble than it's worth.
3. a The definition of résumé as a short account of a person's qualifications for seeking a job has nothing to do with the poem. The poem concerns going on with one's life. It also is a summary of ways to kill oneself.
4. a Suicide is a serious problem among youth in American society. By treating such a serious subject with humor, the writer is able to communicate effectively the message that life is worth living. The poet uses rhyme, but it is not the main reason for the poem's effectiveness.

Internal Revenue Service cartoon

1. c The taxpayer's reply to the robber upon leaving the IRS office means that the robber is too late because the IRS had earlier "robbed" the taxpayer.
2. a, d, f, g There are no facts to support the statements that the taxpayer has money in his briefcase, that he is being arrested, or that the gunman wants to kill the taxpayer.

Martha J. Barnes, Reading and Critical Thinking in the Content Areas (Chicago: Contemporary Books, Inc., 1988), pp. 110-120.

Alcohol Passage

1. d The entire passage discusses the effect of alcohol on different people. Choice *a* is advice that the article doesn't give, and choice *c* is off the topic. Although the passage explains why men can consume more alcohol than women, it is a detail and not the main idea.
2. a, c, e The passage does not support the statement that women do not get drunk as quickly as men. In fact, the opposite is stated.
3. c Of the choices listed, the facts in the passage can explain only why some men are able to take advantage of women who drink.
4. Five things from the passage that can determine how quickly a person may get drunk are:
   (1) how fast alcohol is absorbed into the bloodstream
   (2) how quickly it is eliminated from the body
   (3) the amount of water the drinker's body contains
   (4) the percentage of body fat a person has (or size)
   (5) whether the drinker is a male or a female

Inferences

"Experience" cartoon

1. b The cartoon shows two images: a person looking for a job and a candidate running for the office of president of the United States. The ordinary citizen is turned away because he lacks experience, but the politician does not need any. By putting the two ideas together, the cartoonist is suggesting that a double standard exists.
2. b Of the choices given, only Pat Robertson, a religious leader, had never held a political office when he ran for president.

Left and Right Brain Power

1. d The only choice that is suggested by the passage is that left-brain and right-brain people approach problems differently.
2. You could have chosen three of the following pieces of evidence to support your inference:
   - The left half controls the ability to see detailed patterns; the right half controls the ability to see the whole picture.
   - Left-brained people tend to be better at performing detail-oriented work; right-brained people tend to be better at performing tasks that require the ability to see the "big picture."
   - Visual responses are different for each half of the brain.
   - The left half of the brain focuses on special facial features; the right half usually sees the entire face.
3. trees, forest
   Trees refers to details; *forest* refers to the larger picture.
4. The expression is generally used as a put-down for detail-oriented people, or left-brain dominant people.

Monkey's Paw

1. c The monkey's paw brings sorrow and suffering to the three people who ask it to grant wishes. This fact suggests that the best title among the choices is: "Be Careful About What You Ask for—You Just Might Get It."
2. d Mrs. White is grief stricken upon her son's death and wishes him alive again. This is contrary to choice *d,* that she cares more about the insurance money than she does about her son.
3. no The story does not take place in the United States. The clue word that helps to determine this fact is *pounds.* A pound is a unit of money used in Great Britain.
4. Mr. White's second wish is for his son's return to life. The clue that helps determine this is that, after his son dies and Mr. White makes a second wish, he hears a loud knocking at the door.
5. Mr. White's third wish is for Herbert's spirit to rest in peace. The clue that helps determine the answer is that, after Mr. White makes the wish, the knocking stops.

Conclusions from Facts

Pie Graphs—Offenders and Victims

1. a. 18%
   b. 56% (38% + 18%)
   c. 18%
   d. 21% (17% + 4%)
2. a. no The graph does not concern the number of robberies reported.
   b. yes By adding the percentage of murders committed by acquaintances of the victims (38%) to the percentage of murders committed by relatives (18%), you arrive at a total of 56%. This means that most victims of homicides know the people who kill them.
   c. yes The percentages of people killed by strangers and relatives both are 18%.
   d. no The graph does not compare the number of robberies to the number of violent crimes committed.
   e. yes The graph shows that 75% of robberies are committed by strangers—the greatest percentage of all categories shown.
   f. yes The percentage of robberies committed by strangers (75%) is greater than the percentage of murders committed by strangers (18%).

Manchild in the Promised Land

1. According to the passage, the mother is willing to withstand the cold and to buy spoiled meat rather than complain. Both of these facts support the statement that she is willing to risk her health.
2. The son pawns his ring so that he and his mother can take a cab to the housing office. This indicates unselfishness.
3. The passage mentions cold weather and a snowstorm.
4. The references to 145th Street and Broadway, two streets mainly identified with New York City.

Zits Can Give Teens Fits

1. yes The passage describes the various stages of acne.
2. no The passage cautions people to avoid fatty and acidic foods but does not state that fats and acids are the chief causes of acne.
3. yes The first sentence of the passage states that acne is a common skin problem for teenagers.
4. no Dirty skin is not mentioned as a cause of acne.
5. yes Fatty acids contain oils, so they increase the amount of oil in the body.
6. yes The passage states that acne is especially common during the teen years because the production of sex hormones increases.

Predictions and Outcomes

One Flew over the Cuckoo's Nest

1. d The statements "We do not impose certain rules and restrictions on you without a great deal of thought" and "What can we do? You can't be arrested. You can't be put on bread and water. . . . What can we do?" both add up to the prediction that the men will have one of their favorite privileges taken away.
2. c The passage makes no mention of the men's lack of job skills in the outside world.

The Insurance Game

1. c The passage states, "The company is gambling that most young people will live through the year." A gamble is a bet based on evaluating certain odds. A dice game and a lottery operate differently than a bet.
2. c The amount of insurance premiums are determined by how long people in a given population are expected to live. If women's premiums are lower than men's, then you can conclude that women generally live longer than men. It is a faulty generalization that women are healthier than men.
3. b Of the three choices, only health has a direct relationship to the length of a person's life.

4. a. 71.9 years
   b. 77.3 years
   c. 4.3 years less
   d. 4.2 years longer
5. a. F At every age level of the chart, women's life expectancy is higher than men's.
   b. T Women who were 65 years old in 1980 were expected to live 17.3 more years; men of the same age were expected to live 14 more years.
   c. F At the ages of 10, 15, and 20, both males and females had many years left to live.
   d. F Men who were 30 years old in 1980 could be expected to live until the age of 73.2.

CHAPTER 2: WHAT PATTERN IS FOLLOWED?

Cause and Effect

Plaque Attack

1. The order may vary:
   a. eating on the run
   b. not flossing
   c. not brushing
2. Gingivitis is the first stage of gum disease that untreated plaque leads to.
3. Periodontitis is the advanced stage of gum disease that untreated plaque leads to.
4. Tooth loss is the final result of untreated gum disease.
5. Plaque-fighting toothpastes have resulted from dentists' warnings about the dangers of plaque.

Cop-outs for Dropouts

1. In some urban communities, almost half of the ninth graders drop out before they complete high school.
2. d lack of dedicated teachers
   e inadequate teaching of basic skills
3. a lack of support from parents
   c school administrators
4. a too little government funding
   c unprepared and undedicated teachers
5. b peer group pressure
   c lack of parental support
   d overcrowded classes

Against the Odds

1. Answers will vary. Possible causes of Terry's fall are a twisted ankle and overeagerness to win the game.
2. The effects of Terry's fall were (1) a fractured kneecap requiring extensive knee surgery and (2) postponement of a possible pro basketball career.
3. b According to the passage, an athlete who suffered an injury similar to Terry's was back on the court within a year.
4. a The statement "down, but not down for the count" suggests that Terry is not giving up on his career goal.
5. Answers will vary. "Against the Odds" is an appropriate title because it shows an athlete's determination to "beat the odds" and realize his dream.

Sequence

Senior Fights Back

1. a. 2
   b. 1
   c. 3
   d. 4
   e. 6
   f. 5
   g. 7
   h. 8
2. b The best statement of the message that underlies the passage is "Looks Are Deceiving" because one would not ordinarily expect a female senior citizen to be able to defend herself.
3. c Sally's ability to defend herself suggests that she had training in self-defense.
4. b The only reasonable prediction based on the events is that the boy will be booked for attempted armed robbery since the witnesses to the crime called the police.

Illustration—Human Reproduction

Human reproduction is a many-staged process. The father contributes the sperm. The mother contributes the ovum. The parents' sex cells unite into a fertilized ovum. The fertilized ovum divides into two cells. The two cells divide into four cells. From four cells, the fertilized ovum divides into eight. Within one month a human embryo is formed. After nine months, the baby is fully formed, a creature that is made up of millions of cells!

Drug Use and Abuse Are Not New

a. 1800s
b. 1980s
c. 1805
d. 1960s
e. 1893
f. 1832
g. 1900s
h. 2700 B.C.
i. 1500 B.C.
j. 1700s

2. a. T The passage discusses the medical uses of certain drugs.
   b. T The passage mentions the addictive powers of opium and cocaine.
   c. F The passage mentions marijuana's effectiveness in counteracting the nauseous side effects of chemotherapy.
   d. T All of the drugs described in the passage come from plants.
   e. T The passage mentions England's use of heroin as a painkiller and states that it is illegal in the United States.

Comparison and Contrast

Worlds Apart

1. a. Both are 25 years old.
   b. Both live in South Africa.
   c. Both work at the same mine.
2. Exact wording may vary. You could have listed five of these six differences:
   a. Simon can't vote in national elections; Pieter can.
   b. Simon is black; Pieter is white.
   c. Simon lives in poverty; Pieter does not.
   d. Simon is a laborer; Pieter is a foreman.
   e. Simon earns $200 a month; Pieter earns $200 a week.
   f. Simon is likely to be less educated than Pieter.
3. The answers below show from highest to lowest:

   Percent of population:
   blacks, whites, coloreds, Asians

   Literacy level:
   whites, Asians, coloreds, blacks

   Money spent on education:
   whites, Asians, coloreds, blacks
4. a. however
   b. although
   c. different
   d. contrasted to
   e. while

Smoking, Thumb Sucking, and . . . Lollipops

1. a. are bad habits
   b. have bad effects on the victim's health
   c. are described as being relaxing
   d. satisfy the need for oral stimulation
2. a. T
   b. S
   c. S
   d. S
   e. T
   f. T
   g. S
3. Effects of smoking cited in the passage are lung cancer, heart disease, and other respiratory diseases.
4. Effects of thumb sucking cited in the passage are crooked teeth and lisping.
5. You may have chosen five of these "contrast" words contained in the passage: but, though, while, nevertheless, differences, on the other hand, and however.
6. a. in common
   b. both
   c. similarity
7. a. to begin
   b. second
   c. third
   d. finally

Friends' Advice

1. out of sight, out of mind
2. no news is good news
3. you're never too old to learn
4. a bird in the hand is worth two in the bush
5. he who hesitates is lost
6. still waters run deep
7. d In the story, for every positive statement given, a negative one applies. This suggests that, for most platitudes, it's easy to find an opposite.
8. a. what you don't know can't hurt you
   no news is good news
   b. you can't judge a book by its cover
   still waters run deep
9. Based on the advice given, it would seem that Jan is the true friend because the advice she gives Connie is more encouraging than June's.

CHAPTER 3: WHAT WORDS ARE USED?

Denotation and Connotation

A Writer Needs an Ear for Words

1. a. ate
   b. devoured
   c. glowing
   d. glittered
   e. obesity
   f. plump
   g. unutterable
   h. unspeakable
2. b The entire point of the essay concerns the proper use of words. Choices *a* and *c* are details that support the main idea. Choice *d* is not stated.

What's in a Name?

1. a. hair designer or hairstylist
   b. maintenance engineer
   c. sanitation engineer
   d. funeral director or mortician
   e. domestic engineer
2. c The passage raises the question of whether or not changes in job titles reflect status consciousness more than the desire for more accurate descriptions. This would seem to imply that, for status conscious people, changes in job titles are more important than for people who are secure in themselves. Choice *a* is stated directly in the passage, and choices *b* and *c* are neither stated nor implied.

SKILL REVIEW

The War Prayer

1. c By pointing out the negative consequences of war, Twain is suggesting that war is a mixed blessing. The other titles do not fit the poem.
2. a. 3
   b. 2
   c. 1
   d. 5
   e. 4
   f. 7
   g. 6
3. Exact wording may vary.
   The young men in uniform are held in high esteem because they are going off to war to defend their county.
4. The mood of the church before the stranger's speech is jubilant, joyful. The mood during the speech is hushed.
5. Exact wording may vary.
   Few individuals spoke openly against the war because they were afraid of being viewed as being unpatriotic.
6. In his prayer, the pastor is asking for victory over and protection from the enemy in war. Twain's message is that the request does not seem to befit the role of a pastor because engaging in war goes against the principles of most religions.
7. a The stranger pointed out to the congregation the consequences of victory in war. By showing the ill effects of war, he is implying that a just God does not approve of war under any circumstances.
8. You can probably conclude that Twain withheld the poem from publication because of the controversy it would raise by being antiwar in a prowar period.
9. From the man's act of questioning the messenger's sanity, you can infer that people who do not conform to the larger society's ways of thinking are considered to be abnormal.
10. Answers will vary, but it is true that speaking out against war is not as unpopular in recent years as it was in Mark Twain's time.

CHAPTER 4: HOW SOUND IS THE REASONING?

Invalid Conclusions

A Heart Gives Out

1. d The passage cites several health problems that Mayor Washington had that put him in the high risk category. However, the conclusion of the passage suggests that his death was related directly to the political fighting in City Hall. This represents an invalid conclusion based on faulty reasoning.

2. a. I The passage discusses the risk factors involved in heart attacks. Just because a person has high blood pressure, high cholesterol levels, and does not get regular checkups doesn't mean he or she will have a heart attack.

   b. V The passage points out that high blood pressure alone doubles the risk of heart attacks, and that blacks develop high blood pressure twice as often as whites and they die from it three times as often.

   c. V If obesity, high cholesterol levels, and smoking increase one's risk of suffering a heart attack, then reducing these risk factors would reduce a person's risk.

   d. I The passage points out that the mayor's poor physical health was the key factor that contributed to his death, not his love for the city.

   e. I People *can* reduce their risk of suffering heart attacks.

3. b The passage says, "Mayor Washington was such a case, despite the state-of-the-art medical care used to revive him." In the way it is used, state-of-the-art means modern.

Twelve Angry Men

1. a While it may be true that some teenagers from disadvantaged areas are physically abused daily, it is not valid that *all* of them suffer the same fate.

2. d There are exceptions to the rule that teenagers from disadvantaged areas are physically abused daily.

3. Juror Eight appears to show the most concern by his statement that "It's not easy for me to raise my hand and send a boy off to die without talking about it first."

4. Juror Ten appears to show the least concern by his statement that "We don't owe him a thing. He got a fair trial."

Bar Graph—"Married Women Double in the Work Force"

1. V The percentage of married women who had jobs in 1957 was 33%; the percentage in 1987 was 68%.

2. I The graph does not explain why more married women are working today.

3. V The percentage of single women in the work force for 1957 and 1987 is 80%.

4. I The graph does not deal with reasons why more divorced women are working today.

5. V The percentage of married women working in 1987 was 68%; the percentage of divorced and widowed women who were working was 79%, a difference of 11%.

6. V The graph shows that the majority of married women are working today (68%) as opposed to only 33% thirty years ago. Assuming that the husbands of these women also have jobs, this fact supports the conclusion that the United States has become primarily a two-income-family nation within the past 30 years.

Values

The Gentleman of Rio en Medio

1. c Don Anselmo had agreed to sell his land to the Americans for less than it was worth, but was not willing to sell the trees that stood for his family members. These facts support the statement that Don Anselmo was a man of his word who valued family more than money.

2. Answers will vary. Two sentences that show Don Anselmo to be a mannerly and dignified man are: "The old man bowed to all of us," and, "Then he shook hands all around."

3. The Americans demonstrate their respect for the generosity of Don Anselmo by buying the trees from his descendants.

4. The Americans could have put up a *No Trespassing* sign on the property and had the trespassers arrested for overrunning the property.

5. a In the United States, the seller of property seeks the highest price a buyer will pay for property.

6. c The story is titled "Gentleman of Rio en Medio" because the main character acts like a gentleman throughout. He shows the qualities of politeness and loyalty, and he is considerate and respected.

7. b Of the three groups shown, only Native Americans do not perceive land in terms of its dollar value.

Is the "Right to Die" a Wrong Idea?

1. b The Dutch culture is different than the culture of the United States. The fact that the Dutch are not kept on life-support systems as often as in the United States indicates a value being decided by the needs of the culture.
2. a In the passage, the critics question giving doctors the right to "play God." This argument is based on standards of right and wrong as determined by religion.

Pie Graph—Should Mercy Killing Be Legal?

1. b Whether the lawyers represent a geographic cross-section of the United States has much to do with the reliability of the information in the graph.
2. a If the percentage of those responding "Don't Know" is added to the percentage responding "Should Not" (11.5 and 31.7 percent) the total would be 43.2 percent. This figure is smaller than the one for those who favor mercy killing (56.8 percent).
3. c Of all the specialties in law listed, the real estate lawyer's opinion would carry the least weight. A specialist in that field would deal less frequently with related issues than would criminal and civil lawyers. Criminal lawyers deal with cases that include physical injury and death. Civil lawyers consider issues that have to do with lawsuits that sometimes involve bodily injury.

Fact, Opinion, and Hypothesis

Curious Tourist, Yankee Gringo

1. a Of the choices, only a—that if their parents had jobs, many Mexican children would not have to beg American tourists for money—is a hypothesis. You could check this hypothesis by seeing if most of the parents of begging children had jobs.
2. a. O Whether Mexican or Puerto Rican food is tastier is based on a person's feelings.
   b. F The passage states that Julia and Miguel are celebrating their first wedding anniversary.
   c. F The passage states that Sarah and Sid sit across from Julia and Miguel, who have seats in the tourist section.
   d. O Cuteness is a matter of personal opinion.
   e. F Data can prove whether inflation has lowered the value of the peso.

It Is 3:30. Do You Know Where Your Child Is?

1. F This is stated in the article.
2. O It cannot be proved whether the Swedish government or the U.S. government cares more for its children. The level of caring cannot be measured.
3. H The statement could be proved by measuring attendance at PTA meetings after the establishment of child-care centers in schools.
4. O That American taxpayers should support adequate child care is an opinion.
5. O Whether Ziegler's idea about solving the child-care crisis costs too much money depends on one's personal feeling about how much money is "too much."

Pretty Poison

1. a. O Whether all homes should have plants is a matter of personal taste. The word *should* indicates an opinion.
   b. F The passage identifies Goldfrank as a medical expert at New York University Medical Center. This could be verified through the medical center's personnel department.
   c. H The results of talking to plants every day can be tested.
   d. H The statement that poisoning incidents in the home would drop if parents stopped buying toxic plants can be tested.

e. H The possible relationship between the number of poisonous houseplants sold and the number of poison victims admitted to emergency rooms can be tested.

2. b The best reason given as to why poinsettias would be defended against claims that they are poisonous is that people might not buy them, and as a result, sales would suffer. People who buy poinsettias are not as likely to start a campaign in favor of the plants as people who sell them. The statement that Christmas is not Christmas without poinsettias is a personal opinion.

Author's Bias

A Review of *Everything Goes* by Holly Hansen

1. The critic thinks *Everything Goes* is a poor novel.
2. Answers will vary. Some words that show the critic's bias against the book are: ". . . an effort to satisfy the tasteless appetite of today's mass paperback reader"; "it was impossible for this reader to focus on the main character"; "the main character is described using all of the standard worn-out phrases"; and "we should weep for the hundreds of trees that went into the publication of this book. We should pray that she never gets near a word processor again."
3. Answers will vary. However, generally critics are well-read people and are knowledgeable about the kinds of books they review.
4. The purpose of the advertisement is to get the public to buy the book in spite of its flaws.
5. Answers will vary. A promoter would be doing his job by publicizing the book in the way described. The words are actually included in the critic's review, but they are taken out of context and distort the critic's intent in favor of the writer.
6. The promotional piece distorts the true meaning of the critic's review by taking out words that are necessary to communicate the reviewer's true feelings.

Stereotypes

After You, My Dear Alphonse

9

1. a The title "After You, My Dear Alphonse" shows the courtesy and respect the boys have for each other.
2. e The line "*Dead Japanese . . .*" serves to place the story in time. During World War II, the United States was at war with Japan. Also, the line indicates that the boys are playing war. Throughout the story the boys are never shown as having prejudiced feelings (choice a).
3. b The image of Boyd carrying kindling wood suggests the idea of slavery.
4. Answers may vary. Some statements that indicate Mrs. Wilson's attitude toward blacks are: "Boyd will eat *anything*"; "Boyd wants to grow up and be a big strong man so he can work hard"; "And he certainly has to be strong to do that—all that lifting and carrying at a factory"; and "I guess all of you want to make just as much of yourselves as you can."
5. Mrs. Wilson offers Boyd the clothes because she assumes that Boyd's family is poor.
6. Johnny behaves differently from his mother in that he accepts Boyd for who he is. Unlike Mrs. Wilson, Johnny has no preset ideas about what Boyd or his family should be like.
7. The statements indicating that the boys do not understand Mrs. Wilson's behavior are: " 'She's screwy sometimes.' 'So's mine,' Boyd said."

CHAPTER 5: WHAT LOGIC IS FOLLOWED?

Analogy

Impeaching a President

1. b The passage shows the similarity between impeaching a president and performing surgery on a sick patient.
2. Impeachment and surgery are alike in that:
   a. Both are actions that should not be done hastily or emotionally.

b. Both are procedures whose purpose is to remove a source of serious trouble and reestablish a healthy condition.

c. Both situations require consultation, and a decision may take several months.

d. Both involve periods of stress for everybody concerned.

e. Neither should be undertaken unless there is no alternative.

3. b A surgeon performs the operation on a sick patient; the Senate makes the final decision on impeachment.

4. b Both the House of Representatives and a physician make a preliminary decision, not the final judgment.

5. The comparison made between impeaching a president and performing major surgery is sound because the two procedures, though different, are related to each other in a similar way.

6. The ideas being compared are running a city and paying one's gas bill. The analogy is unsound because running a city requires skills that greatly differ from those needed to manage one's personal finances.

7. The ideas being compared are the American family and the U.S. government. The analogy is unsound because a family's economic needs and resources are different from those of a government involving hundreds of millions of people.

Persuasive Techniques

Letter to the Editor 1

1. The persuasive technique used is *name-calling*, the tactic of attaching an unfavorable name to an idea. The writer describes the high-rise projects as snake pits.
2. The technique used is *testimonial*, the strategy of identifying a well-known person with a cause. The writer states that the well-loved and respected mayor believed that managing public housing is impossible.
3. The technique used is *bandwagoning*, the tactic of persuading someone to do something just because someone else does it. The writer tries to persuade the city's housing committee to dynamite the projects because St. Louis did it.
4. The technique used is *glittering generalities*, using general and vague terms to influence a person to act. The writer does not say just how getting rid of the buildings will "do wonders" or how it will give the residents a "new lease on life."
5. The technique used is *innuendo*. The paragraph hints that Commissioner Greene may have something to hide, since he is the only member who is against tearing down the projects.

Letter to the Editor 2

1. The technique used is *innuendo*. The writer is hinting that the newspaper to which she is writing is in favor of dynamiting the projects.
2. The technique used is *name-calling*. The writer describes Joe Blow as "weak-thinking" and accuses him of living in an "ivory tower."
3. The technique used is *testimonial*. The writer mentions a famous former resident who opposes tearing down the high-rise projects.
4. The technique used in the paragraph is *bandwagoning*. The writer suggests that others join in the movement toward resident involvement in decison making.
5. The technique used is *glittering generalities*. The writer does not state what "unlimited opportunities" for change and improvement will follow from residents having a voice in decision making.

SKILL REVIEW

Teachers: An Endangered Species

1. b The passage says that when males dominated the teaching profession, teachers were given more respect. The decline in respect for teachers could have other causes than the increase in women teachers. Other changes may also have taken place.

   c The editorial implies that the increase of female teachers in the schools brought about a breakdown in discipline. This conclusion is invalid because there could be many other causes for the breakdown in discipline in the schools.

d The editorial does not provide evidence to support the statement that fields dominated by men receive more respect than those dominated by women. The passage does not say how much respect people in other fields get.

f The statement that male teachers take their jobs more seriously than female teachers do cannot be supported because seriousness and dedication are not restricted to one sex. Female teachers take their jobs just as seriously as male teachers.

2. Three statements that show bias against women include "Men took their jobs seriously and devoted the time necessary to do a good job in the classroom," implying that women do not; "Today, however, with mostly women in the classroom, teachers are viewed as little more than high-priced baby-sitters;" and "It stands to reason that the fields dominated by men receive more respect than those dominated by women."

3. a. F By citing salary figures, the editorial shows that the average beginning salary of a teacher is low compared to the starting salaries of an engineer.

   b. O The belief that teachers should be paid as much as other professionals who have an equal amount of education is an opinion. The word *should* indicates an opinion.

   c. O It is an opinion that teachers have an easy career. Whether a career is easy depends on a person's standards for judging.

   d. H Research could test whether greater pay and respect would lead to an increase in the number of good teachers drawn to the field.

   e. H Research could test the relationship between an increase in pay and the number of men (with families) returning to the teaching field. Research could also test whether most men who have given up teaching have families to support.

4. a By comparing average salaries for beginners in three fields and showing that teachers earn the least money, the writer implies that teaching is undervalued.

5. Answers will vary. One statement that supports the belief that U.S. teachers have low status is the saying "Those who *can*, do; those who *can't*, teach," which implies that teachers have little ability. Another statement is that teachers are often described as incompetent and lazy. Also, by contrasting the status of teachers in Europe with the status of teachers in the United States, the writer supports the belief that American teachers have relatively low status.

6. A stereotype about teachers mentioned in the essay is that teachers are incompetent and lazy.

7. b The analogy is unsound because students' performance *is* related to their teacher's expectations as demonstrated by the editorial's example. Students who have been expected to receive poor grades are given them. The same students who have been expected to perform well do so. On the other hand, teachers' performance is *not* related to their low status in the eyes of the public. To argue that because teachers have low status they perform poorly is unsound reasoning.

8. Answers will vary. Students can choose one of these three ways in which teachers and endangered species are alike:

   (1) The numbers for both are shrinking.
   (2) Teachers and endangered species are valuable resources.
   (3) Both require special action to increase their numbers.

9. Two forms of persuasion shown in the editorial are name-calling and bandwagoning.

10. Examples of name-calling include *high-priced baby-sitters* and the description of teachers as incompetent and lazy. Examples of bandwagoning include the statements *Other countries pay more than lip service to education. Why can't we?* and *You can get behind the movement for educational reform that is sweeping the country.*

STRATEGIES FOR SUCCESS ANSWER KEY

STRATEGIES FOR SUCCESS

Strategy 1

A mineral is something you find in the earth like oil and coal.

Strategy 2

A monsoon is a wind in southern and Southeast Asia. It brings heavy rain.

STRATEGIES FOR SUCCESS

1. The Topic Sentence

Sex-role socialization begins early.

2. The Unstated Main Idea

We expect boys and girls to behave differently.

OR: Boys and girls are treated differently.

STRATEGIES FOR SUCCESS

Example 1

1. Goods made on the assembly line cost less than goods made by one person.
2. In 1916, they could make cars more quickly and more cheaply than in 1908. So there were a lot more cars in 1916.

Example 2

You can answer this question in many ways. Here is one example.

1. I know I've experienced inflation. I can remember paying a lot less for some of the things I buy today. I've been laid off, so maybe I've experienced recession too.
2. Depression seems to be the worst of the three.

STRATEGIES FOR SUCCESS

You can answer the questions many ways. Here are some examples.

Example 1

Some people were afraid that the federal government might be given too much power. *As a result*, the writers of the Constitution split the federal government into three branches.

Example 2

Because the Constitution was carefully written, it is still a useful plan of government today.

OR: The Constitution was carefully written. *Therefore*, it is still a useful plan of government today.

STRATEGIES FOR SUCCESS

You can answer the questions in many ways. Here are some examples.

Strategy 1

Christopher Columbus made four trips across the Atlantic Ocean in search of India. His first trip was in 1492. Then, a year later, he tried again. In 1498, he made his third trip. Finally, in 1502, he made his fourth unsuccessful attempt to find India.

Strategy 2

For seven years, Columbus tried to find someone to pay for his trips. First he asked John II of Portugal for the money. Then he wrote to Henry VI of England. At last, he met with Queen Isabella of Spain. She agreed to finance his voyages.

Judith Andrews Green, Social Studies: Strategies for Success (Austin: Steck-Vaughn Company, 1987) pp. 36, 119, 100, 82, 58.

ANSWERS AND EXPLANATIONS-- PRACTICE

DETAIL	1.	(4) is correct. The writer tells you that those who support the "nature" side think that heredity is the key.
APPLICATION	2.	(2) is correct. If the right environment can increase intelligence, then it would make sense to train children early.
CONCLUSION	3.	(1) is the best answer. The sales trend is downward for American-made cars. Sales of imports or foreign cars are rising. You can conclude that since more foreign cars are being sold in the U.S. more will be seen on our highways.
PRIOR KNOWLEDGE	4.	(2) is the correct answer. There was nothing to help you find this answer. You must have already known the meanings.
PRIOR KNOWLEDGE	5.	(5) is the correct answer. You can look on a map and see that this is true.
DETAIL	6.	(2) is correct. It is stated in the second paragraph.
INFERENCE	7.	(3) is the best answer. Since the passage does not explain this, you must figure it out. The fact that some states have large numbers of representatives gives you the clue that each may have less power than do members of the smaller Senate.
APPLICATION	8.	(5) is the best answer. The last sentence points out that a member of Congress must work for the good of the whole nation.
INFERENCE	9.	(3) is the correct answer. Alaska's population is lower than any of the other states listed. Therefore, it must have fewer representatives.
PRIOR KNOWLEDGE	10.	(1) is the correct answer. The Boston Tea Party was a protest. The American colonists dumped tea into the harbor because they did not want to keep paying taxes to England. It had no direct connection to slavery in the U.S.
DETAIL	11.	(4) is the correct answer. This is explained at the beginning of the second paragraph.
APPLICATION	12.	(2) is the best answer. The passage says that personality relates to how we get along with people. A course like this would deal with that topic.

Lillian J. Fleming, Editorial Director, Building Basics in Social Studies (Chicago: Contemporary Books, Inc.) pp. 17-19.

PRIOR KNOWLEDGE 13. (2) is correct.. Tariffs are taxes on imports and this one keeps the price of foreign steel in line with the price of domestic steel. This keeps the two prices competitive.

APPLICATION 14. (4) is correct. You must know that the stars mean capital cities. Then you must use the scale in the lower left corner to judge the distance between the two cities.

DETAIL 15. (4) is correct. This fact is stated in the second paragraph.

INFERENCE 16. (3) is the best answer. The writer ends with a cautious note about technical advance. He says that progress is happening in Mexico, but seems to be worried about what this may do to Mexico's rich culture.

INFERENCE 17. (1) is the best answer. The writer gives details to support the idea that some of the Indian culture still remains.

PRIOR KNOWLEDGE 18. (5) is the correct answer. A peer group is a group of people who have age, grade or status in common.

MAIN IDEA 19. (1) is the best answer. All of the others are details that are part of the main idea.

DETAIL 20.. (1) is correct. This is stated in the second paragraph from the end.

INFERENCE 21. (5) is the best answer. The last paragraph shows what happened as people began to feel more hopeful.

INFERENCE 22. (1) is correct. You can figure this out from the information given at the beginning of the passage.

APPLICATION 23. (3) is the best answer. It deals with a basic state law. (1) is not a broad enough issue. All of the others are powers of Congress.

APPLICATION 24. (3) is the correct answer. Since the passage says that the Consumer Price Index tells the percent of a worker's pay needed to buy certain goods, you can figure this out. When the index remains the same, it means that prices and wages are at the same ratio to each other.

PRIOR KNOWLEDGE 25. (2) is the correct answer. The "lame ducks" are those who did not win or are leaving office, but still have to finish out the term.

MAIN IDEA 26. (3) is correct. The first line gives you the idea. Each discussion of zones also talks about climate and population.

INFERENCE 27. (4) is correct. (1) and (5) are only parts of the answer. (2) and (3) are effects of climate.

INFERENCE 28. (2) is the correct answer. You can figure this out from the information in the passage.

DETAIL 29. (1) is the correct answer. You can note that the figures go from 31 to 41, 51, 62, 73.

DETAIL 30. (3) is the correct answer. You can see this by looking at the graph for the years 1840 and 1920.

INFERENCE 31. (1) is the correct answer. You can figure this out from the fact that farmers were moving to cities and becoming more dependent on a cash economy. Those who raised their own food would not depend so much on having money.

CONCLUSION 32. (2) is the best answer. The passage points out that the Constitution can adapt as needs change. It also says that we've followed it since 1787.

DETAIL 33. (3) is correct. This is stated in the first line of the second paragraph.

APPLICATION 34. (1) is the best answer. The passage tells you that a corporation can act as one, but that no one member would be responsible for its debts. This means you risk less.

PRIOR KNOWLEDGE 35. (5) is the correct answer. Two hundred years had passed since America declared its independence from Britain in 1776. Centennial means 100th anniversary and "bi" means two or, in this case, two times 100.

PRE-TEST ANSWER KEY

1. (4)
2. (2)
3. (1)
4. (2)
5. (5)
6. (2)
7. (3)
8. (5)
9. (3)
10. (1)
11. (4)
12. (2)
13. (2)
14. (4)
15. (4)
16. (3)
17. (1)
18. (5)
19. (1)
20. (1)
21. (5)
22. (1)
23. (3)
24. (3)
25. (2)
26. (3)
27. (4)
28. (2)
29. (1)
30. (3)
31. (1)
32. (2)
33. (3)
34. (1)
35. (5)

SCIENCE

To The Student,

The Science Test is designed to test your skills in understanding reading passages in biology, earth science, chemistry, and physics. Included in this packet are reading selections that cover all of the four areas of science. However, you will readily notice as you begin reading through the selections that there are many more biology selections than the other 3 areas. That is because 50% of the Science Test is biology, and the biology questions will include plant, animal, and human biology. So, study and read as much biology as you can!

We encourage you to do all the "Think and Write" activities that are incorporated throughout this packet. These activities will not only enhance your writing abilities but will also challenge your thinking in science issues.

The Stated Main Idea

Read the passage below, and circle the correct answer for each question that follows.

Tired Hearts

The average human heart beats about 100,000 times a day and pumps about 2,000 gallons of blood a day. But even the heart gets tired and sometimes needs a rest. This fact was proved by medical researchers from the University of Pennsylvania.

In a study, twenty-one strong and healthy athletes took part in the "Ironman" triathlon held in Hawaii. The triathlon consisted of three events. The first was a 2.4 mile swim, the second a 26-mile run, and the third a 112 mile bicycle race.

The researchers learned that, after the triathlon, the athletes' hearts did not contract as well with each beat. Nor did their hearts pump as much blood between beats. However, twenty-four hours later, the athletes' hearts were again beating about 100,000 times daily and pumping almost 2,000 gallons of blood.

1. The main idea of the passage is that
    a. athletes do not suffer form heart fatigue
    b. a triathlon includes fewer events than a decathlon
    c. running 26 miles is less stressful than biking 112 miles
    d. exercise does not cause permanent damage to athletes
    e. an overworked heart does not work as peak levels

2. Which of the following statements does **not** help you to identify the main idea?

    a. The University of Pennsylvania has reliable sports researchers
    b. After athletes participated in a triathlon, their hearts did not pump the normal amount of blood.
    c. Athletes who participated in the "Ironman" triathlon swam 2.4 miles, ran 26 miles, and biked 112 miles.
    d. The hearts of athletes get tired.
    e. Twenty-four hours after the athletes participated in the triathlon, their hearts worked normally.

Martha J. Barnes, Reading and Critical Thinking in the Content Areas (Chicago: Contemporary Books, Inc., 1988), p. 6.

STRATEGIES FOR SUCCESS

1. THE TOPIC SENTENCE

All the sentences in a paragraph usually relate in some way. In other words, there is a main idea. The main idea is often expressed in one of the sentences of the paragraph. This is the topic sentence. It is important to be able to figure out the main idea of a paragraph. Knowing the main idea will help you understand the whole paragraph or passage better.

STRATEGY: Find the sentence that tells the main idea.

1. Read all the sentence in the paragraph.
2. Find one sentence that sums up all the other ideas of the paragraph.

Example: Find the sentence that gives the main idea of this paragraph.

If someone asked you to list the important organs of the human body, you would probably mention the heart and the brain. You probably wouldn't mention the skin. But the skin is as important as the other, more famous organs. It is the largest organ of the body. It weighs about six pounds. Without it, we would die.

Most of the sentences in the paragraph are about the skin. The third sentence gives the main idea. The first two sentences are preparing you for this idea. The last three explain more about it.

Write: Write the sentence that gives the main idea of this paragraph. Use the strategy above.

There are three basic kinds of blood vessels: arteries, veins, and capillaries. The arteries carry the blood away from the heart. The veins carry blood back to the heart. And the capillaries deliver the blood to the body's cells.

2. THE UNSTATED MAIN IDEA

Sometimes the main idea isn't stated directly. Then you have to figure out yourself what the main idea is.

Judith Andrews Green, *Science: Strategies for Success* (Austin: Steck-Vaughn Company, 1987), pp. 22-23, 56-57.

STRATEGY: Think it through.

1. How do all the sentences relate to each other?
2. Use your logic to figure out the main idea.

Example: What is the main idea of this paragraph?

The body's enemies- bacteria and viruses- are in the air we breath. They're in the water we drink. And they're in the food we eat. They're on the outside as well as on the inside of our bodies.

The paragraph mentions several different places where you find bacteria and viruses. The main idea of the paragraph would be: Bacteria and viruses are found almost everywhere.

Write: What is the main idea of the following paragraph? Use the Strategy above.

One of the skin's jobs is to keep the body from drying out. It helps keep the body at the right temperature. And it protects the body from dirt and germs too.

GETTING MEANING FROM CONTEXT

If you were reading and you came to a word you didn't understand, what would you do? You might look it up in a dictionary. But sometimes it's possible to look at the other words in the sentence or paragraph and figure out what the new word means. In other words, you can figure out the word from the context it's in.

STRATEGY 1: Look for certain punctuation marks.

Look for commas (,), dashes (-), and colons(:). These punctuation marks often indicate that a definition, explanation, or example will follow.

Example: What does the word "continent" mean in the following sentence?

The continents- Europe, Asia, North America, South America, Australia, and Antarctica - are constantly moving.

The dashes tell you that Europe, Asia, North America, and so on are examples of continents. From the examples, you can guess that a continent is a large land area.

Write: What do you think Krakatoa is in the following sentence? Use Strategy 1.

In August 1883, Krakatoa, a volcano near Java, exploded. It sent nearly five cubic miles of rock and ash into the air.

STRATEGY 2: Think it through.

1. Read and reread the words or sentences around the unknown word.
2. Use your logic to figure out the word.

Example: What does "plankton" mean in the following paragraph?

Where the Labrador Current and the Gulf Stream meet is called the Grand Banks. The Grand Banks are rich fishing grounds because the mixing of warm and cold waters produces perfect conditions for plankton. The plankton are what fish eat.

Plankton are in the ocean, and they're something that fish eat. From this information, you can guess that plankton are kinds of small plant or animals that live in the ocean.

Write: What do you think "fleet" means in the following paragraph? Use Strategy 2.

The fishing fleets of many nations fish the Grand Banks. The fleets take home millions of dollars of cod, haddock, herring, and mackerel every year.

The Unstated Main Idea

Read the untitled passage below, then answer the questions that follow.

Have you ever wondered how one person can take drink after drink and not get drunk, while another is intoxicated after having only one?

According to the National Institute on Alcohol Abuse and Alcoholism, the effect of alcohol does not depend on how many drinks a person has. It depends on how fast alcohol is absorbed into the bloodstream and how quickly it is eliminated from the body. The more quickly alcohol is absorbed into the bloodstream, the sooner the drinker feels its effects. Also the more quickly it is eliminated from the body, the less likely the drinker is to get drunk.

One factor that affects how alcohol is absorbed is the amount of water the drinker's body contains. Another factor is the percentage of body fat a person has. Fat cells contain very little water. Generally, women have a higher percentage of body fat than men do. Therefore, women absorb more alcohol through the blood stream than do men.

1. The best title for this passage would be

   a. How to Hold Your Liquor
   b. Why Men Can Consume More Alcohol than Women
   c. How to Avoid Alcoholism
   d. The Effect of Alcohol on the Body

2. Place a check before the statements that the details in the passage support.

   ____a. Thin men are likely to get drunk more quickly than fat men.
   ____b. Women do not get drunk more quickly than fat men.
   ____c. Drinking plenty of water can slow the rate at which alcohol is absorbed.
   ____d. Carbonated mixers speed the rate at which alcohol is absorbed.
   ____e. If a man and woman of equal weight take the same number of drinks, the woman will get drunk more quickly.

Martha J. Barnes, Reading and Critical Thinking in the Content Areas (Chicago: Contemporary Books, Inc., , 1988), pp. 12-13, 16,23.

3. The information in the passage might be used to explain why

   a. alcohol abuse is on the rise
   b. people prefer mixed drinks
   c. some men can take advantage of women who drink
   d. the sale of alcohol was banned during the 1920s

4. List the five things from the passage that can determine how quickly a person may get drunk.

   a. ____
   b. ____
   c. ____
   d. ____
   e. ____

Inferences

Read the passage below and answer the questions that follow.

Left and Right Brain Power

The human brain is often described as having two halves - a left hemisphere and a right hemisphere. Each half performs a certain function. The left half controls the abilities to see detailed patterns, while the right half controls the ability to see the whole picture. People who are left-brain "dominant" tend to be better at peforming detail-oriented work. Right-brain "dominant" people generally are better at peforming tasks that require seeing the "big picture."

Research has shown that people respond to what they see differently, depending on which half of the brain dominates. For example, in distinguishing faces, the left half of the brain focuses on special features such as the presence of glasses, the thickness of lips, and the shape of the nose. On the other hand, the right half of the brain usually sees the face in its entirety.

Although people are stronger in using one-half of the brain, we need to use both halves. The challenge for people, be they left-brain or right-brain dominant, is to work on improving the part of the brain that is less developed.

1. The passage implies that left-brain dominant people

   a. are no different than right-brain dominant people
   b. are less talented than right-brain dominant people
   c. are mistreated by the larger society
   d. approach problems differently than right-brain dominant people

2. List three examples of evidence for the inference you chose.

a. ____
b. ____
c. ____

3. There's an expression that says "A person can't see the forest for the trees." According to the passage, left-brained people would see the _____________, while right-brained people would see the ______ __________.

4. The expression might be seen as a putdown of which type of person?

THINK & WRITE: Based on the information in the passage, are you primarily a right-brained or left-brained person? Why?

Conclusions from Facts

Read the following passage, and complete the exercise that follows.

Zits Can Give Teens Fits

Acne is a common skin problem for teenagers. Acne is caused by too much oil being produced by the skin's oil glands. This disorder is especially common during the teen years because the production of sex hormones increases. When the excess oil comes into contact with bacteria, the bacteria set up an infection in the skin.

Acne comes in different forms. A blackhead, for instance, is one type that occurs when dead skins cells and oil get trapped in the ducts and hair follicles. A blackhead is so named because of the dark pigment in the skin cells that clog the ducts.

Sometimes the clogged skin ducts break open. This allows the oil and bacteria to spread to the surrounding tissue. When this occurs, pimples develop or the skin reddens. If the problem goes untreated, the skin becomes even more inflamed, destroying the tissue and causing scarring.

Mild cases of acne can normally be treated by deep cleansing the skin and using over-the-counter medication. More serious acne problems should be treated by a dermatologist. This skin specialist usually prescribes medication to help fight the bacterial infection. As an extra measure, people who have acne are advised to avoid foods that contain high levels of acid or fat.

Write *yes* before each statement that represents a conclusion that can be drawn from the facts in the passage. Write *no* before each statement that is not based on the facts in the passage.

_______ 1. Acne goes through several stages before scarring occurs.

_______ 2. Acne is primarily caused by eating fatty and acidic foods.

_______ 3. Teenagers are more likely to have acne than are adults.

_______ 4. Dirty skin is the chief cause of acne.

_______ 5. Fatty acids increase the amount of oil in the body.

_______ 6. Acne can be blamed on a hormonal imbalance in the body.

STRATEGIES FOR SUCCESS

DRAWING CONCLUSIONS

Writers don't always say everything directly. If you study the facts and read between the lines, you can get a lot of information from a passage. You can use all this information to draw your own conclusions.

STRATEGY: Think it through.

1. What are the facts?
2. What can you find out by reading between the lines?
3. What are your conclusions?

Example: From the information in the following paragraph, what can you conclude about the purpose of the ear?

How do we hear? The outer ear receives sound waves and directs them toward the eardrum. Like a real drum, the eardrum vibrates and transmits the sound waves to the inner ear. The inner ear is full of a liquid that is moved by the sound waves. The hair cells of the inner ear feel the moving liquid and send messages to the brain. These messages are what we call hearing.

The writer gives you the following information:

1. The outer ear directs sound waves to the eardrum.
2. The eardrum transmits the sound waves to the inner ear.
3. The hair cells of the inner ear send messages to the brain.

According to this, everything that happens in the ear has something to do with transmitting or sending sound waves. From this information, you can conclude that the purpose of the ear is to transmit sound waves.

Judith Andrews Green, Science: Strategies for Success (Austin: Steck-Vaughn Company, 1987), pp. 108-109.

Write: Look at the information from the paragraph. Then answer the question.

1. Everything that happens in the ear has to do with sending or transmitting sound waves.
2. The final messages from the ear go to the brain.
3. These messages are called hearing.

Where do we hear? ______________________________

Write: from the information in the following paragraph, what do you think would happen if there were no gravity on earth?

We all live with gravity. It's part of our lives. We expect that when we trip, we'll fall down and not up. We expect people, buildings, trees, and the oceans not to fly off into space when the earth turns.

If there were no gravity on Earth, ______________________________

____

____

What information helped you draw this conclusion?

1. ______________________________

2. ______________________________

Cause and Effect

Sometimes one cause can lead to more than one effect, and one effect can develop from many causes. The next passage provides an example of this. Read the passage, and complete the activity that follows.

Plaque Attack

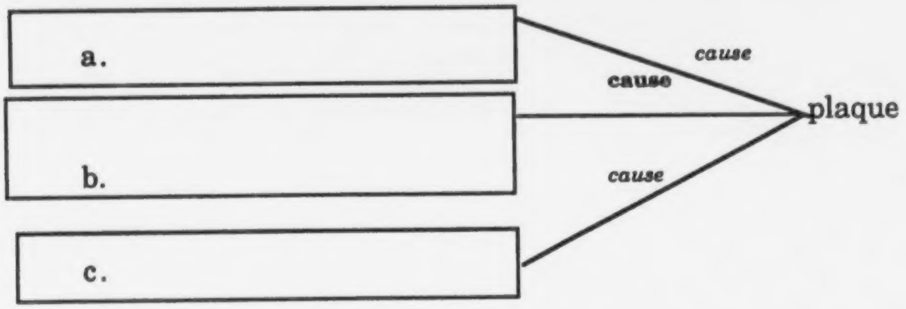
If you eat on the run, without taking time to floss and brush your teeth, you are inviting an enemy called plaque into your mouth. Plaque is a sticky film of bacteria that gradually forms on your teeth. If plaque goes unchecked the results can be a gum disease known as gingivitis. Signs of gingivitis include bleeding and red, swollen gums.

But is doesn't stop there. Untreated gingivitis can develop into a more serious and advanced stage of gum disease, periodontitis. This disease can lead directly to tooth loss.

In reaction to dentists' warnings about the dangers of plaque, several brands of plaque-fighting toothpaste are now on the market. Studies have shown that use of these toothpastes, together with frequent flossing and brushing, have reduced plaque considerably.

Martha J. Barnes, Reading and Critical Thinking in the Content Areas (Chicago: Contemporary Books, Inc., 1988), pp. 32-33.

1. According to the passage, what three things cause plaque?

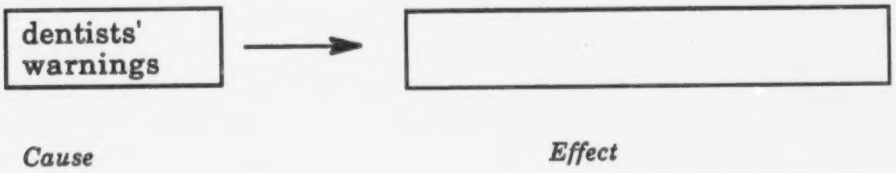

a.
b.
c.
cause
cause
cause
plaque

2. What is the first disease that plaque can lead to? ______________________

3. What advanced stage of disease can untreated plaque lead to? ______________________

4. What might be the final result of gum disease if it is not treated? ______________________

5. What effect have dentists' warnings had on dental hygiene? ______________________


dentists' warnings
Cause
Effect

STRATEGIES FOR SUCCESS

CAUSE AND EFFECT

Sometimes a writer wants to show that one thing happened because another thing happened. In other words, one thing caused something else to happen. It's important to be able to recognize a cause and its results - its effect.

STRATEGY 1: Look for key words and phrases.

1. Some of the words and phrases that show cause and effect are *so, for, because, cause, effect, make, as a result, for this reason, consequently, therefore, when*, and *if*.

2. Use your logic to figure out what the cause is and what the effect is.

Example: Why do people make thermometers with mercury? Find the answer in the following paragraph.

All metals except mercury are solid at room temperature. Mercury is liquid at room temperature. Because of this, it is used in thermometers to show the temperature. But mercury freezes at 38 degrees F. If the temperature drops below this point, the thermometer won't work. Therefore, thermometers are made with alcohol if they are going to be used in very cold areas.

The phrase "Because of this" tells you that a result follows. "Mercury is liquid at room temperature" is the reason, or the cause, that thermometers are made with mercury.

Judith Andrews Green, Science: Strategies for Success (Austin: Steck-Vaughn Company, 1987) pp. 86-87.

Write: Find the answers to these questions in the previous paragraph. Use Strategy 1.

What causes thermometers to stop working? ____________________

What word helped you find the cause? ____________________

When are thermometers made with alcohol? ____________________

What word helped you find the cause? ____________________

STRATEGY 2: Figure out from the context what causes something to happen.

1. Read and reread the paragraph.
2. Use your logic to figure out what the cause is and what the effect is.

Example: What causes the molecules in ice to move? Find the answer in the following paragraph.

When water is solid, that is, when it's ice, all its molecules are lined up in an orderly pattern. But suppose you heat the ice. The water molecules start to move back and forth. The warmer the ice becomes, the faster the molecules move. Soon they are shaking so fast they can't stay in place any longer. Then the ice melts.

The first sentence tells you that when water is ice, the molecules are all lined up. You can guess that they are not moving. The second sentence talks about heating the ice. And the next sentence says the water molecules start to move. You can guess that heating water causes the molecules to move.

Write: What causes ice to melt? Find the answer in the paragraph above. Use Strategy 2.

____

____

be compared to a rusty pump trying to force water through a clamped hose. Simply put, Mayor Washington's heart gave out after years of pumping against increased resistance.

Medical experts, friends, and co-workers questioned whether the mayor had noticed symptoms of his heart disease. It seems certain that no one really knew for sure. But the mayor's doctor said that his patient had been told that he was in the high-risk group.

According to Dr. Robert S. Elliot, a cardiac expert, high blood pressure alone doubles the risk of heart attacks. (Blacks develop high blood pressure twice as often as whites. They die from it three times as often.) People who smoke or have high cholesterol levels carry a risk that is eight times higher. Those who have high blood pressure, smoke, and have a high cholesterol level carry a risk that is up to twelve times higher. For those who have all three of these risk factors and are obese, the risk doubles again. So Mayor Washington's risk was twenty-four times greater than the average!

The mayor's personal doctor thinks that, in addition to his heart problems, his patient may have been suffering from the stress of running the third largest city in the United States.

"He was a workaholic...," the doctor recalls, "a man intensely focused on what he wanted to accomplish.

The doctor added that the stress of the constant fighting in City Hall helped to run the mayor down. The "council wars" that marked his first four years in office added greatly to he mayor's failing health.

Indeed, had it not been for the stress brought on by the opposition aldermen's efforts to block Mayor Washington, "the mayor who loved Chicago more than he loved himself" might still be alive and well today.

1. Which of the following is an invalid conclusion contained in the passage?

a. Mayor Harold Washington was the victim of an acute heart attack.
b. Sudden cardiac death occurs about 1,200 times a day in the United States.
c. About every 72 seconds, one in three people in the nation dies because of heart failure.
d. Mayor Washington's sudden heart attack was directly caused by the ongoing fighting in City Hall.

2. Write V in the space provided it the statement is a valid conclusion based on the information provided and I if it invalid.

______a. If a person with high blood pressure and high cholesterol does not get regular checkups, that person will die of a heart attack.

______b. If you smoke, have high cholesterol and high blood pressure, and are white, your chance of survival from a heart attack is greater than that of a black person with the same health profile.

______c. Losing weight, lowering cholesterol intake, and not smoking can reduce the risk of suffering a heart attack.

______d. Had the mayor not loved Chicago so much, he might be alive today.

______e. Nothing can be done to reduce the risk of a cardiac arrest if a person is in the high-risk category.

3. The term *state-of-the-art* means

a. outdated
b. modern
c. experimental
d. provided for by state taxes

Values

Read the passage below, then answer the questions that follow.

Is the "Right to Die" a Wrong Idea?

Early in 1988, a doctor published an essay. In it he described giving an overdose of morphine to a young woman. She was dying and in severe pain. The overdose killed the woman in five minutes.

In California a man admitted that he had helped his AIDS-stricken friend end his life.

A few years earlier, an elderly man had been jailed because he pulled the plug on his wife's life-support system. She died immediately.

In still another case, the family of a young woman got a court order to disconnect her life-support system. She lay in a coma for several months before her death.

Are these people heroes or criminals? Are the parents of the young woman who lay in a coma for several months killers? Or are they people who have compassion for their loved ones?

Situations such as these have brought the issue of mercy killing to the public eye. In fact, some supporters of mercy killing have proposed letting the voters decide whether doctors should help dying patients end their lives when they ask for such assistance. One proposal requires that two doctors give their consent to disconnect a life-support system or to use some other method of putting a patient out of misery. However, critics from around the nation have opposed this proposal. They questioned giving doctors the right to "play God." Yet, supporters of mercy killing point out that some European nations do permit mercy killings. They consider them to be acts of charity.

Closely connected to mercy killings is the moral question of keeping elderly patients alive on life-support systems at great cost. Estimates in 1988 revealed that nationwide, about 10,000 dying elderly patients are kept alive on such systems. The cost is $1 billion dollars a year. Critics of this practice charge that money spent on prolonging the lives of the terminally ill should be spent differently. It should be spent on saving the lives of the many Americans who can't pay for adequate medical care.

1. The Netherlands spends many dollars per year on health care. The number of terminally ill patients kept on life-support systems there is extremely low compared to the number in the United States. The Dutch spend their medical dollars on providing medical care for the living. In this case a value is decided by

a. standards of right and wrong as determined by religion
b. needs of the culture
c. individual taste

2. Critics who question the doctor's right to "pull the plug" on terminally ill patients apparently base their view on

a. standards of right and wrong as determined by religion
b. needs of the culture
c. individual taste

Fact, Opinion, and Hypothesis

Read the passage below, and complete the exercise that follows.

Pretty Poison

They are beautiful, sensitive, and thrive when exposed to music. Some say they perform better when you talk to them, although they can't respond to you. While they may be good companions for you, they may not be good for young children. What are these living things that few homes can do without? Houseplants - ornaments that add life and style to your environment.

According to emergency medical experts at New York University Medical Center, many common houseplants should be avoided as decorations in homes with young children. Dr. Lewis R. Goldfrank, one of the experts, reports that between 5 and 10 percent of all poisoning involves eating the leaves and stalks of plants. And 85 percent of these cases, he says, occur in children under six years old.

Popular houseplants such as dieffenbachia (dumb cane), monstera (Swiss cheese plant), and philodendron are poisonous. Dumb cane, for example, is known to paralyze the vocal chords if eaten. Other poisonous plants are the English ivy, asparagus fern, bird of paradise, and the umbrella plant. Yuletide plants such a holly, poinsettia, and mistletoe also may be dangerous if they are eaten. However, the question of whether or not the popular poinsettia is truly poisonous is occasionally debated during Chrismastime.

Symptoms of leaf poisoning include skin rashes, nausea, vomiting, and stomach cramps. Blistering and inflamed lips, gums, and tongue also indicate plant poisoning. To prevent houseplant poisoning, parents should keep poisonous leaves away form toddlers. This measure certainly would sharply reduce the number of emergency room patients caused by poisoning.

1. Based on the information in the passage, write F if the statement is a fact, O if it is an opinion, and H if it is a hypothesis.

_______a. Plants make a home; every home should have them.

_______b. Dr. Goldfrank is a medical specialist from New York University Medical Center.

_______c. Talking to your plant every day will result in greater growth than not talking to them.

_______d. If parents would stop buying toxic plants, the number of poisoning incidents in the average home would drop.

_______e. If fewer poisonous houseplants were sold, fewer poison victims would be admitted to emergency rooms.

2. Which is the most likely reason some people claim that poinsettias are not poisonous?

a. People who like poinsettias are afraid they will disappear form the stores during Christmastime.
b. If the belief that the plants are poisonous persists, people will not buy poinsettias and sales will suffer.
c. Christmas is not Christmas without poinsettias around.

THINK & WRITE: Besides houseplants, what are some other products that could cause consumers harm but are defended strongly by their producers? List three products and give the reasons why producers defend them.

PRACTICE

Directions: The Practice will tell you which reading skills you already have and which reading skills you need to work on. It will also give you an idea of the kinds of science passages you will see in the book.

There are two types of questions on this test. Some questions follow a passage. The answers will come from your reading. Other questions called "discrete items" stand alone. You have to use your own experience or prior knowledge to answer a discrete item.

Please a check mark (✓) in the space next to the BEST answer. If you don't know an answer, you can guess. Take your time. There is no time limit.

History has shown us that man is a killer. That may be a shocking statement, but it's true. Since the 1600s, some 300 species of birds and mammals have disappeared or become extinct. The list of endangered fauna, or animal life, now has more than 650 different birds and mammals on it. Humans are to blame for the declining number of these animals.

We probably did not want this to happen. But as our way of life has changed. Our actions have changed. And the animals around us have been affected. Three ways that humans harm animals are by poaching, encroachment and land abuse.

Poaching is the illegal killing or trapping of wild animals. These animals are used for meat, hides or horns, or they are sold to parks and zoos. For example, in Africa great herds of wild animals are being killed off. At one time the white rhino of South Africa numbered less than 100. Because of strict law enforcement and stiff penalties for game hunting, there are now 500 white rhinos.

As the human population of the world grows, people continue to encroach on, or take over, more wildlife areas. Wild animals are being pushed into parks and reserves. Their routes of migration are being blocked or changed by such things as fences, suburbs, superhighways and oil pipelines. Encroachment is almost impossible to stop and hard to control.

Lillian J. Fleming, Editorial Director, Building Basic Skills in Science (Chicago: Contemporary Books, Inc., 1985), pp. 1-11.

Another way humans endanger animal life is through land abuse. We are spoiling the land and water with chemicals and wastes. One such chemical is DDT, a pesticide that has been used by farmers for years. DDT protects crops from harmful insects and disease. But DDT stays in the soil and is carried from the fields into streams and rivers. It then poisons fish and birds. Scientists have observed a drastic decline in fish-eating birds where too much DDT is being used.

1. The passage is mainly about ways people have
   (1) harmed animal life with chemicals
   (2) blocked animal migration
   (3) moved into animal territory
   (4) captured animals illegally
   (5) endangered animal life

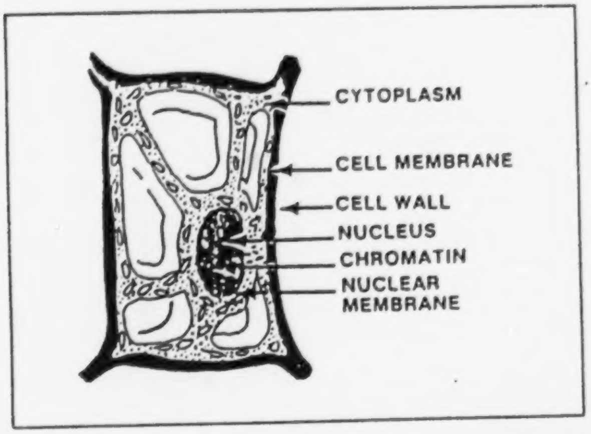
2. Fauna refers to
   (1) flowers
   (2) plants
   (3) animals
   (4) humans
   (5) rhinos

3. As world population grows, wildlife is threatened because
   (1) more meat is eaten
   (2) more people visit zoos
   (3) more land is needed
   (4) there are more hunters
   (5) there are more poachers

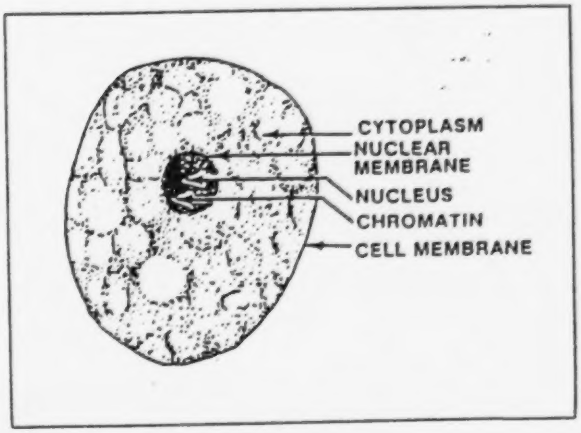
4. If people continue to encroach on wildlife, the numbers of wild animals will probably
   (1) increase
   (2) decrease
   (3) remain the same
   (4) change
   (5) be counted

5. With strict law enforcement, government should be able to
   (1) stop overpopulation
   (2) control poaching
   (3) prevent use of chemicals
   (4) build more parks
   (5) stop hunting

PLANT CELL



ANIMAL CELL



An organism is any living plant or animal. All organisms are made of living matter called protoplasm. Protoplasm varies from animal to animal and from plant to plant. It also varies within any given organism. For example, the protoplasm of human skin is different from that of the stomach lining.

Cells are the living building blocks of protoplasm. Cells can grow and reproduce. The typical animal or plant cell has three main parts. These are the nucleus, the cytoplasm and the cell membrane.

The nucleus is round. It is usually found near the center of the cell. It is also the center of the action. The nucleus controls the life of the cell. It is made up of several important materials. The most important is chromatin, which forms the chromosomes and carries the genes.

Between the nucleus and the outer edge is the cytoplasm. The cytoplasm contains proteins and fats. Molecules of food are received and processed here, or they are stored for later use.

The outer edge of the cell is called the cell membrane. It is firm and tough, but food and those things important to life can pass through it.

While animal and plant cells have similar parts, there are few differences. Plant cells have a cell wall in addition to a cell membrane. Plant cells also have chloroplasts. Chloroplasts contain chlorophyll, the green coloring in plants. Chlorophyll helps make food for the plant through the process known as photosynthesis.

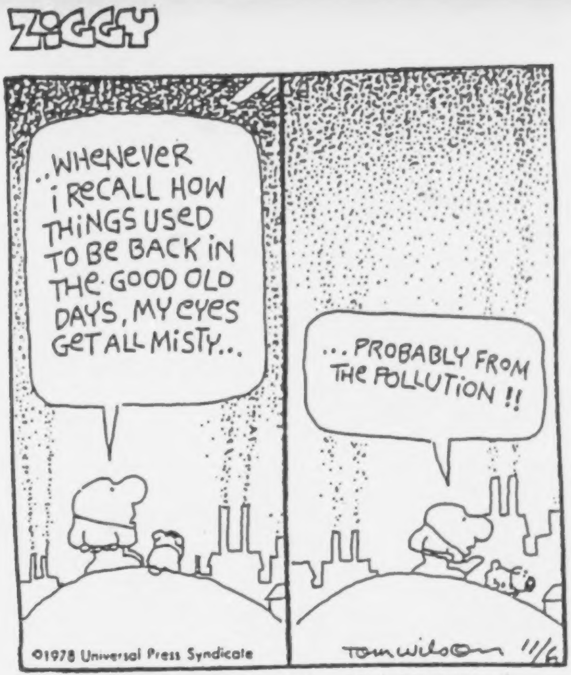
6. The passage is mainly about
(1) organisms
(2) photosynthesis
(3) protoplasm
(4) cell structure
(5) chromosomes

7. The living matter of all organisms is
(1) protoplasm
(2) the nucleus
(3) DNA
(4) choloroplasts
(5) chlorophyll

8. A plant cell is different from an animal cell because it contains
(1) cell membrane and chloroplast
(2) DNA and chromatin
(3) cell wall and chloroplast
(4) cytoplasm and a nucleus
(5) a nucleus and cytoplasm

9. An animal cell is unable to carry on photosynthesis because it doesn't contain
(1) chlorophyll
(2) DNA
(3) cytoplasm
(4) protoplasm
(5) organisms

10. You can conclude that every cell must have a nucleus
(1) so photosynthesis can take place
(2) to control the activities of the cell
(3) to allow food to pass through
(4) to store proteins and fats
(5) to store chloroplasts


ZIGGY
..WHENEVER I RECALL HOW THINGS USED TO BE BACK IN THE GOOD OLD DAYS, MY EYES GET ALL MISTY...
...PROBABLY FROM THE POLLUTION !!
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Tom Wilson 11/6

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11. From the cartoon, you can conclude that pollution
    (1) has always been a problem
    (2) is becoming more of a problem
    (3) makes people remember the past
    (4) cannot be seen in the dark
    (5) does not cause problems

12. How many major blood groups are there?
    (1) 2
    (2) 4
    (3) 6
    (4) 5
    (5) 8

13. If the following objects were dropped from the same height at the same time, which would land first?
    (1) a bowling ball
    (2) a golf ball
    (3) a tennis ball
    (4) a softball
    (5) they would all land at the same time

14. A substance that can be easily found as a solid, liquid or a gas is
    (1) iron
    (2) mercury
    (3) air
    (4) water
    (5) ozone

15. Scientists who study fossils are known as
(1) geographers
(2) anthropologists
(3) chemists
(4) engineers
(5) paleontologists

16. The electricity we use every day is
(1) current electricity
(2) static electricity
(3) magnet electricity
(4) steam electricity
(5) photo electricity

17. Thermal energy is
(1) caused by the sun
(2) used to run windmills
(3) caused by high and low tides
(4) stored inside the earth's crust
(5) a cause of pollution

18. The earth completes one rotation on its axis every
(1) 28 days
(2) 365 1/2 days
(3) 9.2 years
(4) 12 hours
(5) 24 hours

A heart attack isn't always easy to recognize. Warning signs may not even be noticed by the victim. These signs can be so mild that a person thinks they are caused by other things.

There are many symptoms that warn a person of a possible heart attack. One of the main signs is constant pain in the center of the chest. This pain may spread to the shoulders, arms, neck and even the jaw. Some heart attack victims also experience nausea, sweating and extreme shortness of breath. Other victims turn pale or their lips and skins turn blue.

A person having any of these problems for longer than two minutes needs medical help right away. If the heart attack victim responds quickly to the warning signs, that person has a good chance of survival.

19. The best title for this passage is
(1) Chance of Survival
(2) Heart Attack Rescue
(3) Turning Blue
(4) Saving a Life
(5) Heart Attack Symptoms

20. According to the passage, the following is NOT a major sign of heart attack.

(1) fever
(2) chest pain
(3) aching jaw
(4) nausea
(5) sweating

21. Many heart attack victims die because

(1) all heart attacks are fatal
(2) they don't respond to warning signs
(3) they aren't healthy
(4) they don't fight
(5) they choose the wrong kind of doctor

22. If you have a sharp pain in your chest, you

(1) are having a heart attack
(2) are not having a heart attack
(3) could be having a heart attack
(4) have had a heart attack
(5) can't possibly be having a heart attack

23. The author of the passage concludes that survival for the heart attack victim depends on

(1) a good hospital
(2) an experienced nurse
(3) an ambulance
(4) a quick response
(5) remaining conscious

24. Animals that are warm-blooded, have hair and nurse their young are

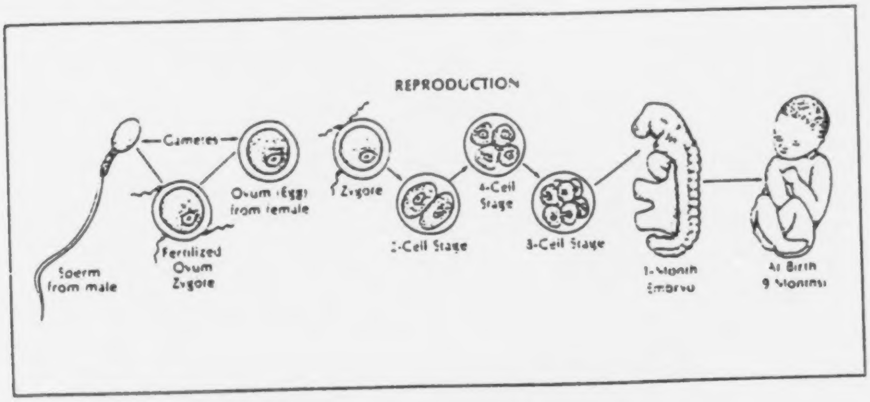
(1) birds
(2) reptiles
(3) fish
(4) mammals
(5) lizards

Sequence

In science, the steps in a process are often pictured in sequence. By following the steps shown in order, you can understand the beginning and end result of a process.

Listed below are the steps in the human reproductive process. In the blanks provided, number the sentences and phrases in the correct order. Then, on the lines provided, write a short paragraph using the sentences and phrases to explain the process of reproduction.

_____Within one month a human embryo is formed.
_____The mother contributes the ovum.
_____From four cells, the fertilized ovum divides into eight.
_____The parents' sex cells unite into a fertilized ovum.
_____The father contributes the sperm.
_____After nine months, the baby is fully formed.
_____The fertilized ovum divides into two cells.
_____The two cells divide into four cells.
_____Human reproduction is a many-staged process.
_____The ovum is then fertilized.
_____A creature that is made up of millions of cells!



Comparison and Contrast

Read the passage below, and complete the activity that follows.

Smoking, Thumb Sucking, and...Lollipops

Smoking and thumb sucking are two bad habits that are hard to break. One is an adult behavior, and the other is a childish habit. But the two have more in common than one might realize.

To begin, smoking and thumb sucking are looked upon as bad habits by many. Society generally considers smoking to be a vice. A vice is a bad habit that might be called a weakness. Thumb sucking, though is merely looked upon by adults as undesirable behavior in children.

A second similarity between the two is that they both have bad effects on the victim's health. Smoking has long been connected with lung cancer, heart disease, and other respiratory illnesses. While thumb sucking is not nearly as hurtful to a child's health, the habit can cause crooked teeth and lisping. Parents of thumb suckers can vouch that straightening teeth is a long (and expensive) process.

The third thing in common for both is that smoking and thumb sucking are described as relaxing and calming activities. Some smokers say that smoking calms the nerves. Thumb suckers who are anxious relieve their tensions by nursing their thumbs.

In spite of these similarities, obvious differences exist between smoking and thumb sucking. The chief difference is that smoking is addictive, while thumb sucking is not. The addiction-causing agent in tobacco is nicotine. This addiction makes it harder for the smoker to kick the habit. Thumb sucking, on the other hand, is usually outgrown by age two.

Another difference is that smoking is offensive (and has proved to be harmful) to nonsmokers. As a result, smoking has been limited in many public places in the United States. Thumb sucking, however, is only mildly offensive, and mainly to the parents of the children who have the habit.

Finally, some psychologists accept an interesting theory. It explains the reasons for both activities. Smoking and thumb sucking, they say, satisfy the need for oral stimulation. Perhaps this explains why many smokers who try to break the habit substitute lollipops for cigarettes and pipes.

1. The passage lists four similarities between smoking and thumb sucking. The four similarities are:

a. ____

b. ____

c. ____

d. ____

2. In the spaces below, write S, if the phrase applies to smoking and T if it applies to thumb sucking.

____a. a childish habit

____b. an adult behavior

____c. considered to be a vice by some

____d. addictive

____e. an easier habit to break

____f. inoffensive to most people

____g. life-threatening

3. What health effects of smoking are cited in the passage? ____________________
____

4. What effects of thumb sucking are cited in the passage? ____________________
____

5. The passage contains at least five "contrast" (difference) words or phrases. Write them.

________, ________, ________, ________, ________,

6. The passage contains at least three "compare" (similarity) words. Write them.

a. ____________ b. ____________ c. ____________

7. List the four words or phrases from the passage that indicate sequence.

a. ____________ b. ____________ c. ____________ d. ____________

Invalid Conclusions

A Heart Gives Out

On Wednesday, November 25, 1987, one of the nation's most dynamic and tenacious political leaders died. Harold Washington, the first black mayor of Chicago, became the victim of the nation's number one killer - sudden cardiac arrest.

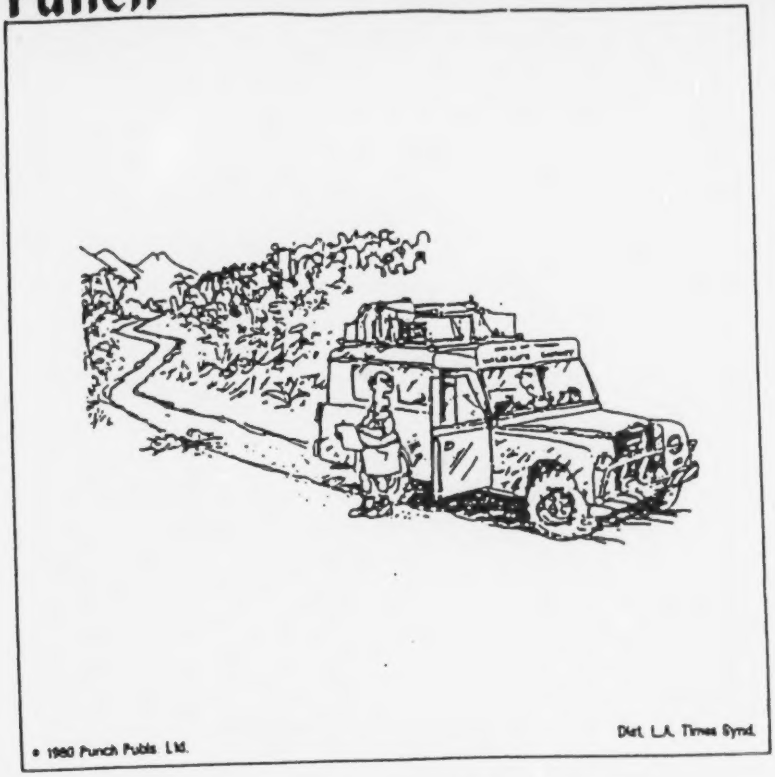
Sudden cardiac death happens approximately 1,200 times daily. This means that about 438,000 people die each year, or roughly one death occurs every 72 seconds.

According to medical experts, in one out of three cases, the first sign of heart disease is the sudden attack itself. Unfortunately, death almost always follows.

Mayor Washington was such a case, despite the state-of-the-art medical care used to revive him. He was reportedly 200 pounds overweight and had a history of heavy smoking.

According to Dr. Antonio Senat, the mayor's personal doctor, he also suffered from high cholesterol levels and high blood pressure. He was referred to as "the mayor with the big heart." Autopsy results proved just how accurate the description was. His heart had swollen to over twice its normal size. As a result, the mayor's coronary arteries were severely blocked. This blockage can

Punch



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"That makes it 23 known surviving examples."

25. The topic of the cartoon is
    (1) an African
    (2) an endangered species
    (3) illegal poaching
    (4) an animal census
    (5) careless driving

Answer Key

CHAPTER 1: WHAT IS THE MESSAGE?

Stated Main Idea

Rosa Parks Sparks Boycott

WHO: Rosa Parks
WHAT: sparked the Montgomery bus boycott
WHERE: Montgomery, Alabama
WHEN: December 1, 1955
HOW: by refusing to give up her seat

MAIN IDEA SENTENCE: On December 1, 1955, Rosa Parks sparked the Montgomery bus boycott in Montgomery, Alabama, by refusing to give up her seat.

Tired Hearts

1. e The facts in the passage state that, after a triathlon, the heart did not contract as well with each beat. However, 24 hours later, the heart worked normally. This points to the main idea that an overworked heart does not work at peak levels.
2. a The reliability of the sports researchers has nothing to do with the way the heart works. All of the other choices are related to the working of the heart.

Poor Girl

1. c The lines "You've got another love" and "If I try to tell her what I know/She'll misunderstand and make me go" suggest that the speaker wants to give advice to her former boyfriend's new girlfriend but is hesitant to do so.
2. b The words *poor girl* suggest pity. A person who is sympathetic to another, and who wants to advise her, would feel pity, not fear or innocence.

The Unstated Main Idea

Résumé

1. c The poem describes the effects of different ways of killing yourself. It ends with the statement: "You might as well live." This indicates that the poem is about suicide.
2. c The poet shows that each of the seven ways of committing suicide has negative effects. This suggests that living is a better choice and that suicide is more trouble than it's worth.
3. a The definition of résumé as a short account of a person's qualifications for seeking a job has nothing to do with the poem. The poem concerns going on with one's life. It also is a summary of ways to kill oneself.
4. a Suicide is a serious problem among youth in American society. By treating such a serious subject with humor, the writer is able to communicate effectively the message that life is worth living. The poet uses rhyme, but it is not the main reason for the poem's effectiveness.

Internal Revenue Service cartoon

1. c The taxpayer's reply to the robber upon leaving the IRS office means that the robber is too late because the IRS had earlier "robbed" the taxpayer.
2. a, d, f, g There are no facts to support the statements that the taxpayer has money in his briefcase, that he is being arrested, or that the gunman wants to kill the taxpayer.

Martha J. Barnes, Reading and Critical Thinking in the Content Areas (Chicago: Contemporary Books, Inc., 1988), pp. 110-120.

Alcohol Passage

1. d The entire passage discusses the effect of alcohol on different people. Choice *a* is advice that the article doesn't give, and choice *c* is off the topic. Although the passage explains why men can consume more alcohol than women, it is a detail and not the main idea.
2. a, c, e The passage does not support the statement that women do not get drunk as quickly as men. In fact, the opposite is stated.
3. c Of the choices listed, the facts in the passage can explain only why some men are able to take advantage of women who drink.
4. Five things from the passage that can determine how quickly a person may get drunk are:
   (1) how fast alcohol is absorbed into the bloodstream
   (2) how quickly it is eliminated from the body
   (3) the amount of water the drinker's body contains
   (4) the percentage of body fat a person has (or size)
   (5) whether the drinker is a male or a female

Inferences

"Experience" cartoon

1. b The cartoon shows two images: a person looking for a job and a candidate running for the office of president of the United States. The ordinary citizen is turned away because he lacks experience, but the politician does not need any. By putting the two ideas together, the cartoonist is suggesting that a double standard exists.
2. b Of the choices given, only Pat Robertson, a religious leader, had never held a political office when he ran for president.

Left and Right Brain Power

1. d The only choice that is suggested by the passage is that left-brain and right-brain people approach problems differently.
2. You could have chosen three of the following pieces of evidence to support your inference:
   - The left half controls the ability to see detailed patterns; the right half controls the ability to see the whole picture.
   - Left-brained people tend to be better at performing detail-oriented work; right-brained people tend to be better at performing tasks that require the ability to see the "big picture."
   - Visual responses are different for each half of the brain.
   - The left half of the brain focuses on special facial features; the right half usually sees the entire face.
3. trees, forest
   Trees refers to details; *forest* refers to the larger picture.
4. The expression is generally used as a put-down for detail-oriented people, or left-brain dominant people.

Monkey's Paw

1. c The monkey's paw brings sorrow and suffering to the three people who ask it to grant wishes. This fact suggests that the best title among the choices is: "Be Careful About What You Ask for—You Just Might Get It."
2. d Mrs. White is grief stricken upon her son's death and wishes him alive again. This is contrary to choice *d*, that she cares more about the insurance money than she does about her son.
3. no The story does not take place in the United States. The clue word that helps to determine this fact is *pounds*. A pound is a unit of money used in Great Britain.
4. Mr. White's second wish is for his son's return to life. The clue that helps determine this is that, after his son dies and Mr. White makes a second wish, he hears a loud knocking at the door.
5. Mr. White's third wish is for Herbert's spirit to rest in peace. The clue that helps determine the answer is that, after Mr. White makes the wish, the knocking stops.

Conclusions from Facts

Pie Graphs—Offenders and Victims

1. a. 18%
   b. 56% (38% + 18%)
   c. 18%
   d. 21% (17% + 4%)
2. a. no The graph does not concern the number of robberies reported.
   b. yes By adding the percentage of murders committed by acquaintances of the victims (38%) to the percentage of murders committed by relatives (18%), you arrive at a total of 56%. This means that most victims of homicides know the people who kill them.
   c. yes The percentages of people killed by strangers and relatives both are 18%.
   d. no The graph does not compare the number of robberies to the number of violent crimes committed.
   e. yes The graph shows that 75% of robberies are committed by strangers—the greatest percentage of all categories shown.
   f. yes The percentage of robberies committed by strangers (75%) is greater than the percentage of murders committed by strangers (18%).

Manchild in the Promised Land

1. According to the passage, the mother is willing to withstand the cold and to buy spoiled meat rather than complain. Both of these facts support the statement that she is willing to risk her health.
2. The son pawns his ring so that he and his mother can take a cab to the housing office. This indicates unselfishness.
3. The passage mentions cold weather and a snowstorm.
4. The references to 145th Street and Broadway, two streets mainly identified with New York City.

Zits Can Give Teens Fits

1. yes The passage describes the various stages of acne.
2. no The passage cautions people to avoid fatty and acidic foods but does not state that fats and acids are the chief causes of acne.
3. yes The first sentence of the passage states that acne is a common skin problem for teenagers.
4. no Dirty skin is not mentioned as a cause of acne.
5. yes Fatty acids contain oils, so they increase the amount of oil in the body.
6. yes The passage states that acne is especially common during the teen years because the production of sex hormones increases.

Predictions and Outcomes

One Flew over the Cuckoo's Nest

1. d The statements "We do not impose certain rules and restrictions on you without a great deal of thought" and "What can we do? You can't be arrested. You can't be put on bread and water. . . . What can we do?" both add up to the prediction that the men will have one of their favorite privileges taken away.
2. c The passage makes no mention of the men's lack of job skills in the outside world.

The Insurance Game

1. c The passage states, "The company is gambling that most young people will live through the year." A gamble is a bet based on evaluating certain odds. A dice game and a lottery operate differently than a bet.
2. c The amount of insurance premiums are determined by how long people in a given population are expected to live. If women's premiums are lower than men's, then you can conclude that women generally live longer than men. It is a faulty generalization that women are healthier than men.
3. b Of the three choices, only health has a direct relationship to the length of a person's life.

4. a. 71.9 years
   b. 77.3 years
   c. 4.3 years less
   d. 4.2 years longer
5. a. F At every age level of the chart, women's life expectancy is higher than men's.
   b. T Women who were 65 years old in 1980 were expected to live 17.3 more years; men of the same age were expected to live 14 more years.
   c. F At the ages of 10, 15, and 20, both males and females had many years left to live.
   d. F Men who were 30 years old in 1980 could be expected to live until the age of 73.2.

CHAPTER 2: WHAT PATTERN IS FOLLOWED?

Cause and Effect

Plaque Attack

1. The order may vary:
   a. eating on the run
   b. not flossing
   c. not brushing
2. Gingivitis is the first stage of gum disease that untreated plaque leads to.
3. Periodontitis is the advanced stage of gum disease that untreated plaque leads to.
4. Tooth loss is the final result of untreated gum disease.
5. Plaque-fighting toothpastes have resulted from dentists' warnings about the dangers of plaque.

Cop-outs for Dropouts

1. In some urban communities, almost half of the ninth graders drop out before they complete high school.
2. d lack of dedicated teachers
   e inadequate teaching of basic skills
3. a lack of support from parents
   c school administrators
4. a too little government funding
   c unprepared and undedicated teachers
5. b peer group pressure
   c lack of parental support
   d overcrowded classes

Against the Odds

1. Answers will vary. Possible causes of Terry's fall are a twisted ankle and overeagerness to win the game.
2. The effects of Terry's fall were (1) a fractured kneecap requiring extensive knee surgery and (2) postponement of a possible pro basketball career.
3. b According to the passage, an athlete who suffered an injury similar to Terry's was back on the court within a year.
4. a The statement "down, but not down for the count" suggests that Terry is not giving up on his career goal.
5. Answers will vary. "Against the Odds" is an appropriate title because it shows an athlete's determination to "beat the odds" and realize his dream.

Sequence

Senior Fights Back

1. a. 2
   b. 1
   c. 3
   d. 4
   e. 6
   f. 5
   g. 7
   h. 8
2. b The best statement of the message that underlies the passage is "Looks Are Deceiving" because one would not ordinarily expect a female senior citizen to be able to defend herself.
3. c Sally's ability to defend herself suggests that she had training in self-defense.
4. b The only reasonable prediction based on the events is that the boy will be booked for attempted armed robbery since the witnesses to the crime called the police.

Illustration—Human Reproduction

Human reproduction is a many-staged process. The father contributes the sperm. The mother contributes the ovum. The parents' sex cells unite into a fertilized ovum. The fertilized ovum divides into two cells. The two cells divide into four cells. From four cells, the fertilized ovum divides into eight. Within one month a human embryo is formed. After nine months, the baby is fully formed, a creature that is made up of millions of cells!

Drug Use and Abuse Are Not New

a. 1800s
b. 1980s
c. 1805
d. 1960s
e. 1893
f. 1832
g. 1900s
h. 2700 B.C.
i. 1500 B.C.
j. 1700s

2. a. T The passage discusses the medical uses of certain drugs.
   b. T The passage mentions the addictive powers of opium and cocaine.
   c. F The passage mentions marijuana's effectiveness in counteracting the nauseous side effects of chemotherapy.
   d. T All of the drugs described in the passage come from plants.
   e. T The passage mentions England's use of heroin as a painkiller and states that it is illegal in the United States.

Comparison and Contrast

Worlds Apart

1. a. Both are 25 years old.
   b. Both live in South Africa.
   c. Both work at the same mine.
2. Exact wording may vary. You could have listed five of these six differences:
   a. Simon can't vote in national elections; Pieter can.
   b. Simon is black; Pieter is white.
   c. Simon lives in poverty; Pieter does not.
   d. Simon is a laborer; Pieter is a foreman.
   e. Simon earns $200 a month; Pieter earns $200 a week.
   f. Simon is likely to be less educated than Pieter.
3. The answers below show from highest to lowest:

   Percent of population:
   blacks, whites, coloreds, Asians

   Literacy level:
   whites, Asians, coloreds, blacks

   Money spent on education:
   whites, Asians, coloreds, blacks
4. a. however
   b. although
   c. different
   d. contrasted to
   e. while

Smoking, Thumb Sucking, and . . . Lollipops

1. a. are bad habits
   b. have bad effects on the victim's health
   c. are described as being relaxing
   d. satisfy the need for oral stimulation
2. a. T
   b. S
   c. S
   d. S
   e. T
   f. T
   g. S
3. Effects of smoking cited in the passage are lung cancer, heart disease, and other respiratory diseases.
4. Effects of thumb sucking cited in the passage are crooked teeth and lisping.
5. You may have chosen five of these "contrast" words contained in the passage: but, though, while, nevertheless, differences, on the other hand, and however.
6. a. in common
   b. both
   c. similarity
7. a. to begin
   b. second
   c. third
   d. finally

Friends' Advice

1. out of sight, out of mind
2. no news is good news
3. you're never too old to learn
4. a bird in the hand is worth two in the bush
5. he who hesitates is lost
6. still waters run deep
7. d In the story, for every positive statement given, a negative one applies. This suggests that, for most platitudes, it's easy to find an opposite.
8. a. what you don't know can't hurt you
   no news is good news
   b. you can't judge a book by its cover
   still waters run deep
9. Based on the advice given, it would seem that Jan is the true friend because the advice she gives Connie is more encouraging than June's.

CHAPTER 3: WHAT WORDS ARE USED?

Denotation and Connotation

A Writer Needs an Ear for Words

1. a. ate
   b. devoured
   c. glowing
   d. glittered
   e. obesity
   f. plump
   g. unutterable
   h. unspeakable
2. b The entire point of the essay concerns the proper use of words. Choices *a* and *c* are details that support the main idea. Choice *d* is not stated.

What's in a Name?

1. a. hair designer or hairstylist
   b. maintenance engineer
   c. sanitation engineer
   d. funeral director or mortician
   e. domestic engineer
2. c The passage raises the question of whether or not changes in job titles reflect status consciousness more than the desire for more accurate descriptions. This would seem to imply that, for status conscious people, changes in job titles are more important than for people who are secure in themselves. Choice *a* is stated directly in the passage, and choices *b* and *c* are neither stated nor implied.

SKILL REVIEW

The War Prayer

1. c By pointing out the negative consequences of war, Twain is suggesting that war is a mixed blessing. The other titles do not fit the poem.
2. a. 3
   b. 2
   c. 1
   d. 5
   e. 4
   f. 7
   g. 6
3. Exact wording may vary.
   The young men in uniform are held in high esteem because they are going off to war to defend their county.
4. The mood of the church before the stranger's speech is jubilant, joyful. The mood during the speech is hushed.
5. Exact wording may vary.
   Few individuals spoke openly against the war because they were afraid of being viewed as being unpatriotic.
6. In his prayer, the pastor is asking for victory over and protection from the enemy in war. Twain's message is that the request does not seem to befit the role of a pastor because engaging in war goes against the principles of most religions.
7. a The stranger pointed out to the congregation the consequences of victory in war. By showing the ill effects of war, he is implying that a just God does not approve of war under any circumstances.
8. You can probably conclude that Twain withheld the poem from publication because of the controversy it would raise by being antiwar in a prowar period.
9. From the man's act of questioning the messenger's sanity, you can infer that people who do not conform to the larger society's ways of thinking are considered to be abnormal.
10. Answers will vary, but it is true that speaking out against war is not as unpopular in recent years as it was in Mark Twain's time.

CHAPTER 4: HOW SOUND IS THE REASONING?

Invalid Conclusions

A Heart Gives Out

1. d The passage cites several health problems that Mayor Washington had that put him in the high risk category. However, the conclusion of the passage suggests that his death was related directly to the political fighting in City Hall. This represents an invalid conclusion based on faulty reasoning.

2. a. I The passage discusses the risk factors involved in heart attacks. Just because a person has high blood pressure, high cholesterol levels, and does not get regular checkups doesn't mean he or she will have a heart attack.

   b. V The passage points out that high blood pressure alone doubles the risk of heart attacks, and that blacks develop high blood pressure twice as often as whites and they die from it three times as often.

   c. V If obesity, high cholesterol levels, and smoking increase one's risk of suffering a heart attack, then reducing these risk factors would reduce a person's risk.

   d. I The passage points out that the mayor's poor physical health was the key factor that contributed to his death, not his love for the city.

   e. I People *can* reduce their risk of suffering heart attacks.

3. b The passage says, "Mayor Washington was such a case, despite the state-of-the-art medical care used to revive him." In the way it is used, state-of-the-art means modern.

Twelve Angry Men

1. a While it may be true that some teenagers from disadvantaged areas are physically abused daily, it is not valid that *all* of them suffer the same fate.

2. d There are exceptions to the rule that teenagers from disadvantaged areas are physically abused daily.

3. Juror Eight appears to show the most concern by his statement that "It's not easy for me to raise my hand and send a boy off to die without talking about it first."

4. Juror Ten appears to show the least concern by his statement that "We don't owe him a thing. He got a fair trial."

Bar Graph—"Married Women Double in the Work Force"

1. V The percentage of married women who had jobs in 1957 was 33%; the percentage in 1987 was 68%.

2. I The graph does not explain why more married women are working today.

3. V The percentage of single women in the work force for 1957 and 1987 is 80%.

4. I The graph does not deal with reasons why more divorced women are working today.

5. V The percentage of married women working in 1987 was 68%; the percentage of divorced and widowed women who were working was 79%, a difference of 11%.

6. V The graph shows that the majority of married women are working today (68%) as opposed to only 33% thirty years ago. Assuming that the husbands of these women also have jobs, this fact supports the conclusion that the United States has become primarily a two-income-family nation within the past 30 years.

Values

The Gentleman of Rio en Medio

1. c Don Anselmo had agreed to sell his land to the Americans for less than it was worth, but was not willing to sell the trees that stood for his family members. These facts support the statement that Don Anselmo was a man of his word who valued family more than money.

2. Answers will vary. Two sentences that show Don Anselmo to be a mannerly and dignified man are: "The old man bowed to all of us," and, "Then he shook hands all around."

3. The Americans demonstrate their respect for the generosity of Don Anselmo by buying the trees from his descendants.

4. The Americans could have put up a *No Trespassing* sign on the property and had the trespassers arrested for overrunning the property.

5. a In the United States, the seller of property seeks the highest price a buyer will pay for property.

6. c The story is titled "Gentleman of Rio en Medio" because the main character acts like a gentleman throughout. He shows the qualities of politeness and loyalty, and he is considerate and respected.

7. b Of the three groups shown, only Native Americans do not perceive land in terms of its dollar value.

Is the "Right to Die" a Wrong Idea?

1. b The Dutch culture is different than the culture of the United States. The fact that the Dutch are not kept on life-support systems as often as in the United States indicates a value being decided by the needs of the culture.
2. a In the passage, the critics question giving doctors the right to "play God." This argument is based on standards of right and wrong as determined by religion.

Pie Graph—Should Mercy Killing Be Legal?

1. b Whether the lawyers represent a geographic cross-section of the United States has much to do with the reliability of the information in the graph.
2. a If the percentage of those responding "Don't Know" is added to the percentage responding "Should Not" (11.5 and 31.7 percent) the total would be 43.2 percent. This figure is smaller than the one for those who favor mercy killing (56.8 percent).
3. c Of all the specialties in law listed, the real estate lawyer's opinion would carry the least weight. A specialist in that field would deal less frequently with related issues than would criminal and civil lawyers. Criminal lawyers deal with cases that include physical injury and death. Civil lawyers consider issues that have to do with lawsuits that sometimes involve bodily injury.

Fact, Opinion, and Hypothesis

Curious Tourist, Yankee Gringo

1. a Of the choices, only a—that if their parents had jobs, many Mexican children would not have to beg American tourists for money—is a hypothesis. You could check this hypothesis by seeing if most of the parents of begging children had jobs.
2. a. O Whether Mexican or Puerto Rican food is tastier is based on a person's feelings.
   b. F The passage states that Julia and Miguel are celebrating their first wedding anniversary.
   c. F The passage states that Sarah and Sid sit across from Julia and Miguel, who have seats in the tourist section.
   d. O Cuteness is a matter of personal opinion.
   e. F Data can prove whether inflation has lowered the value of the peso.

It Is 3:30. Do You Know Where Your Child Is?

1. F This is stated in the article.
2. O It cannot be proved whether the Swedish government or the U.S. government cares more for its children. The level of caring cannot be measured.
3. H The statement could be proved by measuring attendance at PTA meetings after the establishment of child-care centers in schools.
4. O That American taxpayers should support adequate child care is an opinion.
5. O Whether Ziegler's idea about solving the child-care crisis costs too much money depends on one's personal feeling about how much money is "too much."

Pretty Poison

1. a. O Whether all homes should have plants is a matter of personal taste. The word *should* indicates an opinion.
   b. F The passage identifies Goldfrank as a medical expert at New York University Medical Center. This could be verified through the medical center's personnel department.
   c. H The results of talking to plants every day can be tested.
   d. H The statement that poisoning incidents in the home would drop if parents stopped buying toxic plants can be tested.

e. H The possible relationship between the number of poisonous houseplants sold and the number of poison victims admitted to emergency rooms can be tested.

2. b The best reason given as to why poinsettias would be defended against claims that they are poisonous is that people might not buy them, and as a result, sales would suffer. People who buy poinsettias are not as likely to start a campaign in favor of the plants as people who sell them. The statement that Christmas is not Christmas without poinsettias is a personal opinion.

Author's Bias

A Review of *Everything Goes* by Holly Hansen

1. The critic thinks *Everything Goes* is a poor novel.
2. Answers will vary. Some words that show the critic's bias against the book are: ". . . an effort to satisfy the tasteless appetite of today's mass paperback reader"; "it was impossible for this reader to focus on the main character"; "the main character is described using all of the standard worn-out phrases"; and "we should weep for the hundreds of trees that went into the publication of this book. We should pray that she never gets near a word processor again."
3. Answers will vary. However, generally critics are well-read people and are knowledgeable about the kinds of books they review.
4. The purpose of the advertisement is to get the public to buy the book in spite of its flaws.
5. Answers will vary. A promoter would be doing his job by publicizing the book in the way described. The words are actually included in the critic's review, but they are taken out of context and distort the critic's intent in favor of the writer.
6. The promotional piece distorts the true meaning of the critic's review by taking out words that are necessary to communicate the reviewer's true feelings.

Stereotypes

After You, My Dear Alphonse

9

1. a The title "After You, My Dear Alphonse" shows the courtesy and respect the boys have for each other.
2. e The line "*Dead Japanese . . .*" serves to place the story in time. During World War II, the United States was at war with Japan. Also, the line indicates that the boys are playing war. Throughout the story the boys are never shown as having prejudiced feelings (choice a).
3. b The image of Boyd carrying kindling wood suggests the idea of slavery.
4. Answers may vary. Some statements that indicate Mrs. Wilson's attitude toward blacks are: "Boyd will eat *anything*"; "Boyd wants to grow up and be a big strong man so he can work hard"; "And he certainly has to be strong to do that—all that lifting and carrying at a factory"; and "I guess all of you want to make just as much of yourselves as you can."
5. Mrs. Wilson offers Boyd the clothes because she assumes that Boyd's family is poor.
6. Johnny behaves differently from his mother in that he accepts Boyd for who he is. Unlike Mrs. Wilson, Johnny has no preset ideas about what Boyd or his family should be like.
7. The statements indicating that the boys do not understand Mrs. Wilson's behavior are: " 'She's screwy sometimes.' 'So's mine,' Boyd said."

CHAPTER 5: WHAT LOGIC IS FOLLOWED?

Analogy

Impeaching a President

1. b The passage shows the similarity between impeaching a president and performing surgery on a sick patient.
2. Impeachment and surgery are alike in that:
   a. Both are actions that should not be done hastily or emotionally.

b. Both are procedures whose purpose is to remove a source of serious trouble and reestablish a healthy condition.

c. Both situations require consultation, and a decision may take several months.

d. Both involve periods of stress for everybody concerned.

e. Neither should be undertaken unless there is no alternative.

3. b A surgeon performs the operation on a sick patient; the Senate makes the final decision on impeachment.

4. b Both the House of Representatives and a physician make a preliminary decision, not the final judgment.

5. The comparison made between impeaching a president and performing major surgery is sound because the two procedures, though different, are related to each other in a similar way.

6. The ideas being compared are running a city and paying one's gas bill. The analogy is unsound because running a city requires skills that greatly differ from those needed to manage one's personal finances.

7. The ideas being compared are the American family and the U.S. government. The analogy is unsound because a family's economic needs and resources are different from those of a government involving hundreds of millions of people.

Persuasive Techniques

Letter to the Editor 1

1. The persuasive technique used is *name-calling*, the tactic of attaching an unfavorable name to an idea. The writer describes the high-rise projects as snake pits.
2. The technique used is *testimonial*, the strategy of identifying a well-known person with a cause. The writer states that the well-loved and respected mayor believed that managing public housing is impossible.
3. The technique used is *bandwagoning*, the tactic of persuading someone to do something just because someone else does it. The writer tries to persuade the city's housing committee to dynamite the projects because St. Louis did it.
4. The technique used is *glittering generalities*, using general and vague terms to influence a person to act. The writer does not say just how getting rid of the buildings will "do wonders" or how it will give the residents a "new lease on life."
5. The technique used is *innuendo*. The paragraph hints that Commissioner Greene may have something to hide, since he is the only member who is against tearing down the projects.

Letter to the Editor 2

1. The technique used is *innuendo*. The writer is hinting that the newspaper to which she is writing is in favor of dynamiting the projects.
2. The technique used is *name-calling*. The writer describes Joe Blow as "weak-thinking" and accuses him of living in an "ivory tower."
3. The technique used is *testimonial*. The writer mentions a famous former resident who opposes tearing down the high-rise projects.
4. The technique used in the paragraph is *bandwagoning*. The writer suggests that others join in the movement toward resident involvement in decison making.
5. The technique used is *glittering generalities*. The writer does not state what "unlimited opportunities" for change and improvement will follow from residents having a voice in decision making.

SKILL REVIEW

Teachers: An Endangered Species

1. b The passage says that when males dominated the teaching profession, teachers were given more respect. The decline in respect for teachers could have other causes than the increase in women teachers. Other changes may also have taken place.

   c The editorial implies that the increase of female teachers in the schools brought about a breakdown in discipline. This conclusion is invalid because there could be many other causes for the breakdown in discipline in the schools.

d The editorial does not provide evidence to support the statement that fields dominated by men receive more respect than those dominated by women. The passage does not say how much respect people in other fields get.

f The statement that male teachers take their jobs more seriously than female teachers do cannot be supported because seriousness and dedication are not restricted to one sex. Female teachers take their jobs just as seriously as male teachers.

2. Three statements that show bias against women include "Men took their jobs seriously and devoted the time necessary to do a good job in the classroom," implying that women do not; "Today, however, with mostly women in the classroom, teachers are viewed as little more than high-priced baby-sitters;" and "It stands to reason that the fields dominated by men receive more respect than those dominated by women."

3. a. F By citing salary figures, the editorial shows that the average beginning salary of a teacher is low compared to the starting salaries of an engineer.

   b. O The belief that teachers should be paid as much as other professionals who have an equal amount of education is an opinion. The word *should* indicates an opinion.

   c. O It is an opinion that teachers have an easy career. Whether a career is easy depends on a person's standards for judging.

   d. H Research could test whether greater pay and respect would lead to an increase in the number of good teachers drawn to the field.

   e. H Research could test the relationship between an increase in pay and the number of men (with families) returning to the teaching field. Research could also test whether most men who have given up teaching have families to support.

4. a By comparing average salaries for beginners in three fields and showing that teachers earn the least money, the writer implies that teaching is undervalued.

5. Answers will vary. One statement that supports the belief that U.S. teachers have low status is the saying "Those who *can*, do; those who *can't*, teach," which implies that teachers have little ability. Another statement is that teachers are often described as incompetent and lazy. Also, by contrasting the status of teachers in Europe with the status of teachers in the United States, the writer supports the belief that American teachers have relatively low status.

6. A stereotype about teachers mentioned in the essay is that teachers are incompetent and lazy.

7. b The analogy is unsound because students' performance *is* related to their teacher's expectations as demonstrated by the editorial's example. Students who have been expected to receive poor grades are given them. The same students who have been expected to perform well do so. On the other hand, teachers' performance is *not* related to their low status in the eyes of the public. To argue that because teachers have low status they perform poorly is unsound reasoning.

8. Answers will vary. Students can choose one of these three ways in which teachers and endangered species are alike:
   (1) The numbers for both are shrinking.
   (2) Teachers and endangered species are valuable resources.
   (3) Both require special action to increase their numbers.

9. Two forms of persuasion shown in the editorial are name-calling and bandwagoning.

10. Examples of name-calling include *high-priced baby-sitters* and the description of teachers as incompetent and lazy. Examples of bandwagoning include the statements *Other countries pay more than lip service to education. Why can't we?* and *You can get behind the movement for educational reform that is sweeping the country.*

STRATEGIES FOR SUCCESS ANSWER KEY

STRATEGIES FOR SUCCESS

1. The Topic Sentence

The first sentence gives the main idea. You know this because all the other sentences in the paragraph give you more information about the things mentioned in this sentence.

2. The Unstated Main Idea

All the sentences in this paragraph tell you what the skin does—what its jobs are. You can answer this question in several ways, but a good topic sentence would be: The skin has several jobs.

STRATEGIES FOR SUCCESS

Strategy 1

Krakatoa is (was) a volcano near Java.

The comma tells you that a definition or explanation might follow the word Krakatoa. Here, "a volcano near Java" comes after the comma. Since it exploded in 1883, you might guess that it no longer exists. But the paragraph doesn't tell you for sure.

Strategy 2

A fleet has something to do with fishing. Nations have fleets. The fleets take home cod, haddock, etc. From this information, you can guess that a fleet is a group of boats or ships.

STRATEGIES FOR SUCCESS
DRAWING CONCLUSIONS

From the hints, you can conclude that hearing doesn't take place in the ear. The ear just transmits sound waves. You can conclude that we hear in our brain.

The paragraph on page 109.

The information that probably helped you with your conclusion is:

1. Because we have gravity, when we trip, we expect to fall down, not up.
2. Because we have gravity, we expect people, buildings, trees, and the ocean NOT to fly off into space when the earth turns.

Your conclusion might be: If there were no gravity on earth, everything would fly off into space when the earth turned.

STRATEGIES FOR SUCCESS

Strategy 1

The word *if* tells you that temperatures below −38°F will cause a thermometer to stop working. So you might answer the first question by saying that very cold weather or temperatures below −38°F cause thermometers to stop working.

The word *therefore* tells you that what follows might be a result. In this case, it tells you that thermometers in very cold areas are made with alcohol because thermometers made with mercury would stop working.

Strategy 2

You could answer this question in several ways. One answer might be: Ice melts because heat makes the molecules move so fast they can't stay in place.

Judith Andrews Green, Science: Strategies for Success (Austin: Steck-Vaughn Company, 1987) pp. 42, 76, 120, 98.

ANSWERS AND EXPLANATIONS— PRACTICE

Main Idea	1. (5) is the best answer. (1), (2), (3) and (4) are part of the main idea. They are some of the ways that man has endangered or hurt animal life.
Detail	2. (3) is the best answer. Fauna refers to animal life.
Cause-Effect	3. (3) is the best answer. The author writes about wildlife areas being taken over as the population grows.
Cause-Effect	4. (2) is the correct answer. In paragraph two the author explains that as man moves into wildlife areas, the number of animals decreases due to such things as lack of feeding grounds and interference with migration paths.
Conclusion	5. (2) is the best answer. The author suggests that poaching can be controlled through law enforcement. The example of the white rhino is given in the passage.
Main Idea	6. (4) is the best answer. The structure of plant and animal cells is described throughout the selection.
Detail	7. (1) is the correct answer. Protoplasm is the living matter of all organisms.
Compare-Contrast	8. (3) is the correct answer. While plant and animal cells are similar, the plant cell alone has a cell wall and chloroplast.
Cause-Effect	9. (1) is the best answer. Only plant cells contain chlorophyll which is necessary for the food making process known as photosynthesis.
Conclusion	10. (2) is the best answer. The nucleus controls the activities of the cell.
Conclusion	11. (2) is the best answer. The cartoon is showing that because there is so much pollution today, misty eyes are common.
Prior Knowledge	12. (2) is the correct answer. O, A, B and AB are the four major blood groups.
Prior Knowledge	13. (5) is the correct answer. The gravitational pull of the earth puts the same amount of pressure on any object regardless of its weight.

Lillian J. Fleming, Editorial Director, Building Basics in Science (Chicago: Contemporary Books, Inc., 1985) pp. 12-13.

Prior Knowledge	14. (4) is the best answer. Water can easily be found as ice (solid), water (liquid) or steam (gas).
Prior Knowledge	15. (5) is the correct answer. An paleontologist is a scientist who studies fossils.
Prior Knowledge	16. (1) is the correct answer because current electricity is used in the home as a main source of energy.
Prior Knowledge	17. (4) is the correct answer. Thermal energy comes from the heat of the earth. It is caused by hot gases and molten rock within the core of the earth.
Prior Knowledge	18. (5) is the correct answer. The earth completes one rotation on its axis every 24 hours.
Main Idea	19. (5) is the best answer. Heart attack symptoms, such as chest pain and shortness of breath, are discussed throughout the passage.
Detail	20. (1) is the correct answer. Fever is not mentioned in this passage about heart attack symptoms.
Cause-Effect	21. (2) is the best answer. The author explains that many people either do not recognize heart attack warning signs or they relate them to something else such as indigestion.
Cause-Effect	22. (3) is the best answer. One of the major symptoms of heart attack is pain in the center of the chest.
Conclusion	23. (4) is the best answer. The reader can conclude that a quick response to any of the heart attack warning signs may save a life.
Prior Knowledge	24. (4) is the correct answer. (1) birds and (3) fish have no hair. (2) reptiles and (5) lizards are cold blooded. Therefore, mammals is the correct answer.
Inference	25. (2) is the best answer. The clue to the answer is in the phrase "23 known surviving examples." If only 23 examples of the species are left, the species must be endangered.

PRE-TEST ANSWER KEY

1. (5)
2. (3)
3. (3)
4. (2)
5. (2)
6. (4)
7. (1)
8. (3)
9. (1)
10. (2)
11. (2)
12. (2)
13. (5)
14. (4)
15. (5)
16. (1)
17. (4)
18. (5)
19. (5)
20. (1)
21. (2)
22. (3)
23. (4)
24. (4)
25. (2)

LITERATURE AND THE ARTS

To The Student,

The Literature and the Arts test is designed to test your skills in understanding and interpreting what you read in the following areas: fiction, non-fiction, drama, poetry, and commentary on the arts. The reading selections and the exercises in this packet will help you to increase your ability to comprehend what you read. In addition to the reading selections and the exercises, the following information is included:

1. An "Introduction" page that contains all the necessary information you need to know about the specifics of the literature test.
2. A "recommended reading" list for popular literature.
3. A "recommended reading" list for classical literature.
4. A "recommended reading" list for commentary on the Arts.
5. A simulated Literature and the Arts Test.

We recommend that you consider reading some of the books on the reading lists. Any of the suggested materials are excellent, and reading them will help to prepare you more adequately for the literature test. You must remember that the type of reading material in literature is much different in its content and presentation; therefore, your reading approach must be different. Any additional materials, such as those suggested on the reading lists, will strengthen your ability to deal comfortably with this style of reading.

Below is an excerpt taken from a text entitled The Cambridge Comprehensive Program for the High School Equivalency Examination. This excerpt very expertly but understandably explains the difference between the literature and other forms of writing and reading:

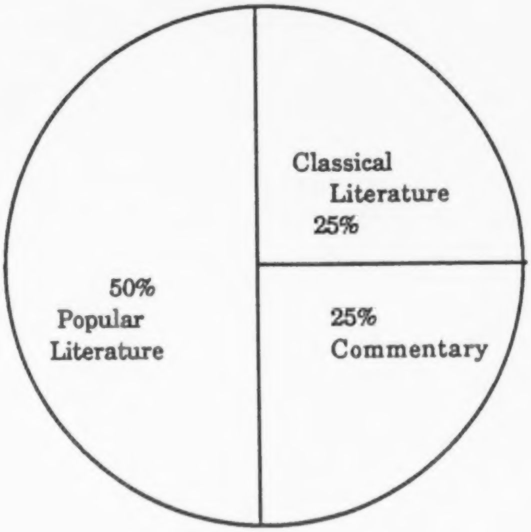
> Each day you come across different kinds of writing. Much of that writing is very specific and very practical and more general in interest. News stories, sports reports, and fashion features are examples of general-interest writing.
>
> Literature, on the other hand, deals with subjects of permanent or universal interest - that is, authors of literature write about topics or ideas that are common to all people. They try to communicate their thoughts in fresh, interesting, and memorable ways...when you not only understand the ideas that an author is trying to express but also take pleasure in the ways that those ideas are being expressed, you are responding to the chief characteristics of literature.

Jerry Long, Executive Editor, The Cambridge Program for High School Equivalency Exam (New York: Cambridge Book Company, 1987), p.369.

PRACTICE EXERCISE SECTION

The practice exercise section is divided into three parts: popular literature, classical lierature, and commentary on the arts. The popular literature section contains practice in fiction, nonfiction, poetry, and drama. These excerpts are taken from contemporary literature written during the past twenty-five years. The classical lierature section also contains practice in fiction, nonfiction, poetry, and drama. These selections are written by well-known authors who have earned a permanent place in literary history. The final section, commentary on the arts, contains reviews of books, TV and films, art and musical performances. These reviews contain both facts and opinions that require careful attention.

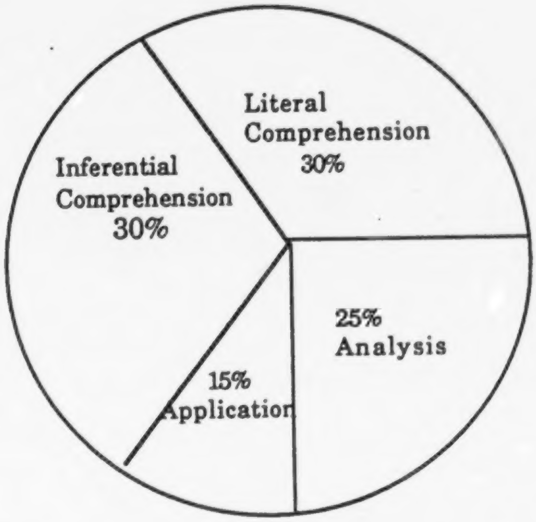
Reading Passages



The reading passages are always introduced with a question that may help to guide your thinking about the passage. Half (50%) of the passages are popular literature, 25% are classical literature, and 25% are commentary on the arts. When you are reading a drama passage, be sure to read the stage directions carefully. Poems are usually relatively short, but take time to think about and understand the poem. Rereading the poem entirely may be helpful.

Virginia A. Lowe, Literature and the Arts Exercise Book (Austin: Steck-Vaughn Company, 1990) pp. 2, 25, 40, 53, 54-65.

Question Types on the GED Test



The GED Literature and the Arts Test examines your aiblity to understand, apply, analyze, and evaluate information in four literature areas and commentary.

All of the questions on the GED Literature and the Arts Test are multiple-choice. You will not be tested on your knowledge of literature, but rather on your ability to understand, interpret, and analyze what you read. Following is an explanation of the four types of questions that you will practice and that are found on the GED Literature and the Arts Test.

1. **Literal Comprehension:** These items require you to restate information and summarize ideas.

2. **Inferential Comprehension:** These items ask you to draw conclusions and infer. They also require you to identify implications of what you read or determine cause and effect of events, feelings, or ideas.

3. **Application:** These items require you to apply information or ideas to a situation that differs from the one in the passage. Questions may be similar to, "How would the author feel about...?" You must use the information provided to problem-solve.

4. **Analysis:** These items require you to examine the elements of style and structure in an excerpt and to determine how these elements relate to the excerpt's final effect.

Virginia A. Lowe, Literature and the Arts Exercise Book (Austin: Steck-Vaughn Company, 1990) pp. 2, 25, 40, 53, 54-65.

ELEMENTS OF LITERATURE

1. The 4 basic elements of any literary work are:

   A. Character - persons or objects affected by the Actions and Ideas of the author; the way in which the author reveals his/her thoughts and ideas.

   B. Plot - Storyline; what happens to the characters.

      1. Straight Plot - chronological order
      2. Flashback - Present/Past/Present

   C. Theme - Basic idea of the story; develops plot and character.

   D. Style - The way the writer uses words to create the story. (Language; use of sentences and paragraphs).

A good writer balances all elements to create a unified work.

2. Tone - expression of the author's attitude or feeling; mood

3. Point-of-View - Through whom does the author "see" the events of the story?

   1st person - written with "I"

   3rd person - written with "he" or "she"; more objective; often uses a narrator as an observer.

4. Narrator - One who tells a story: objective; gives greater details; can look at story events in many different ways; not one sided.

5. Symbolism - When one thing stands for or represents something else.

6. Foreshadowing - A hint or a clue of something to come in the plot of a story.

7. Description and Detail - Imagery: appeal to the senses.

8. Similie - Comparison of 2 different things using Like or As

The stars, like her sparkling eyes, shine their brightest on a cool, clear night.

9. Metaphor - comparison of 2 different things by saying one is the other.

"Some say love, it is a river ..."

10. Plot structure:

1. Exposition: Background; situation of the story; Introduction; sets the stage for the story; introduces the characters; provides the setting (time,place).
2. Rising Action - Building the suspense; can create mystery
3. Complication - An unexpected twist in the story line.
4. Climax - highest point of interest is reached; not always at the end of the story.
5. dā nu mon
   De/noue/mont - End of the story; solution or outcome.
6. Epilogue - additional ending; sometimes needed as a final explanation. May and often does interpret the story.

The Stated Main Idea

Read the poem "Poor Girl" and answer the questions that follow.

Poor Girl

You've got another love
    and I know it
Someone who adores you
    just like me
Hanging on your words
    like they were gold
Thinking that she understands
    your soul
Poor Girl
    Just like me.

You're breaking another heart
    and I know it
And there's nothing
    I can do
If I try to tell her
    what I know
She'll misunderstand
    and make me go
Poor Girl
    Just like me.

You're going to leave her too
    and I know it
She'll never know
    what made you go
She'll cry and wonder
    what went wrong
Then she'll begin
    to sing this song
Poor Girl
    Just like me.

-by Maya Angelou

Martha J. Barnes, Reading and Critical Thinking in the Content Areas (Chicago: Contemporary Books, Inc., 1988), pp. 7, 10, 17-18, 21-22, 25-26, 36-37, 39-40, 51-53, 70-71, 74-77, 81-82.

1. The speaker is the person who tells the poem. The main point expressed by the poem is that the

a. speaker is jealous of the girl her ex-boyfriend is dating
b. speaker's new boyfriend knows what she feels
c. speaker wants to give advice to her ex-boyfriend's new girlfriend
d. speaker's new boyfriend has a history of breaking girls' hearts

The Unstated Main Idea

Read the poem, then answer the questions that follow.

Resume

Razors pain you;
Rivers are damp;
Acids stain you;
And drugs cause cramp;
Guns are lawful;
Nooses give;
Gas smells awful;
You might as well live.

-By Dorothy Parker

1. This poem is mainly about

a. murder
b. death
c. suicide
d. life

2. Which statement *best* summarizes the poet's feelings?

a. There are many different ways of killing yourself.
b. Death is the last stage of existence.
c. Suicide is more trouble than it's worth.
d. There is no easy way to die.
e. Life is too beautiful and precious to waste.

3. "Resume" is a clever title for this poem. Which of the following definitions is *not* related to the main idea of the poem?

a. A resume is a short account of a person's qualifications for seeking a job.
b. Resume can mean "to begin again" or "to recover."
c. A resume is another name for a summary; the poem summarizes ways to end life.

4. This poem is effectively *mainly* because the poet

a. treats a serious subject with humor
b. Uses rhyming words
c. list seven ways of taking one's life

THINK & WRITE: Do you think people have a right to kill themselves? What might motivate a person to take his or her life?

Inferences

Read the following summary of "The Monkey's Paw" by W.W. Jacobs, and answer the questions that follow.

Mr. and Mrs. White and their son Herbert gathered around the fireplace to hear Sergeant-Major Morris tell a story about a monkey's paw. The paw had been placed under a spell and had the power to grant three wishes for three different men. Sergeant-Major Morris, himself, received the paw after the first owner's final wish - death - had been granted.

The paw had caused great suffering for Sergeant-Major Morris. To be rid of it, he tried to destroy it by throwing the paw into the fire. Ignoring the Sergeant-Major's warning about the paw's dangers, however, Mr. White retrieved it.

Doubting the paw's powers, Mr. White asked how a person was to make the wishes. The Whites didn't believe that the paw could do them harm. Morris told them how to make the wishes.

Mr. White's first wish was for 200 pounds to pay off his mortgage, but when the mail came to his home the next day, Mrs. White found only bills. The second day, however, a visitor from Herbert's job came to express the company's sympathy: Herbert had been caught in machinery at work and was killed. The visitor delivered insurance money in the amount of 200 pounds.

A week after Herbert's funeral, a grief-stricken Mrs. White forced her husband to make a second wish. Hours later, they heard a knock at the door. The knocking got louder and louder. As Mrs. White struggled to open the bolted door, Mr. White searched desparately for the paw to make his third wish. Mrs. White freed the bolt just as he found the paw to make the final wish. As he made it, the knocking stopped suddenly, and the door opened. A cold wind rushed up the staircase.

1. A good title for this story might be

a. Magical Powers Can't Change Your Life
b. You Get What You Deserve
c. Be Careful About What You Ask for - You Just Might Get It
d. Death Comes in Many Disguises

2. Which of the following ideas is *not* suggested in the story?

a. Grief sometimes makes people do unreasonable things.
b. The monkey's paw is a wicked and horrible symbol.
c. People sometimes put their faith in charms.
d. Mrs. White cares more about the insurance money than she does about her son's death.

3. Does this story take place in the United States? ________________________

What one clue word helped you decide? ________________________

4. What is Mr. White's second wish? ________________________

What clue helped you to decide? ________________________

5. What is Mr. White's third wish? ________________________

What clue helped you to decide? ________________________

THINK & WRITE: Why would the first owner of the paw have asked for death as his final wish? What does this suggest about his first two wishes?

Conclusions from Facts

In the following excerpt from *Manchild in the Promised Land*, by Claude Brown, Claude advises his mother to complain to the housing commission about her cold apartment. As you read the excerpt, think about his mother's reaction to filing a complaint. Then complete the activity that follows.

This day that I'd come up to talk was right after a big snowstorm. It was pretty cold. Mama was complaining about how cold it was. "Mama, why don't you complain to the landlord about this?"

"I called the office of the renting agency twice, and they said he wasn't in. When I called the third time, I spoke to him but he said that it wasn't his problem, and I'd have to fix it up myself. I ain't got no money to be getting these windows relined."

"Mama, that's a whole lot of stuff. I know better than that. Why don't you go up to the housing commission and complain about it?"

"I ain't got no time to be goin' no place complaining about nothin'. I got all this housework to do, and all this cookin'..."

We went over to 145th Street. We were going to take the crosstown out to Broadway, to the temporary housing commission office. We were waiting there. Because of the snowstorm, the buses weren't running well, so we waited there for a long time. Mama said, "Look, we'd better wait and go some other time."
I knew she wanted to get out of this, and I knew if I let her go and put it off to another time, it would never be done. I said, "Mama, we can take a cab."

"You got any money? I ain't got none either. So we better wait until another time." She waited there on the corner, and I went over to the pawnshop and pawned my ring. When I came back, we took a cab to Broadway and 145th Street, to the temporary housing commission office. When I got there, I told one of the girls at the window that I wanted to write out a complaint against a tenement landlord...

I thought about the way Mama would go down to the meat market sometimes, and the man would sell her some meat that was spoiled, some old neck bones or some pig tails. Things that weren't too good even when they weren't spoiled. And sometimes she would say, "Oh, those things aren't too bad." She was scared to take them back, scared to complain until somebody said, "That tastes bad."

The statements below are based on the passage. For each statement, write a detail from the passage that would support.

1. The mother is willing to risk her health to avoid complaining.
Support:

2. The son is unselfish.
Support:

3. The story takes place during the winter.
Support:

4. The story takes place in New York City.
Support:

Predictions and Outcomes

In the following excerpt from *One Flew over the Cuckoo's Nest,* Nurse Ratched explains to the patients the mental hospital staff's reason for punishing them. As you read the excerpt, notice how Nurse Ratched justifies the punishment given to them.

"Boys, I've given a great deal of thought to what I am about to do. I've talked it over with the doctor and with the rest of the staff. And we all came to the same conclusion - that your behavior concerning house duties three weeks ago was unspeakable. We waited this long to say anything, hoping that you men would take it upon yourselves to apologize for the rebellious way you acted. But not one of you has shown the slightest sign of remorse.

"Please understand. We do not impose certain rules and restrictions on you without a great deal of thought about their therapeutic value. A good many of you are in here because you could not adjust to rules of society in the outside world. You refused to face up to them and you tried to avoid them. At some time - perhaps in your childhood - you may have been allowed to get away with breaking the rules of society. When you broke a rule, you knew it. You wanted to be dealt with. And you needed to be dealt with, but the punishment did not come. That foolish leniency on the part of your parents may have been the germ that grew into your present illness. It is difficult to enforce discipline in these surroundings. You must be able to see that. What can we do? You can't be arrested. You can't be put on bread and water. You must see that the staff has a problem. What can we do?"

1. Based on what the speaker says, the staff will probably

a. send the men to a work farm
b. recommend that the men get psychiatric help
c. ignore the neglectful behavior and give the men another chance
d. punish the men by taking away one of their favorite privileges

2. The speaker suggests that the men's confinement is partly due to all of the following *except*

a. their parents' failure to discipline them as children
b. their inability to cope with rules in the outside world
c. their lack of job skills in the outside world
d. their need for psychological therapy

Cause and Effect

Read the passage below and complete the activity that follows.

Against the Odds

"We want Terry!" the fans chanted. It was the last game of the season. Terry had looked forward to this moment for a long time. As far back as he could remember, he had wanted to be a superstar. As he looked around the college gym, Terry wondered how many scouts were there. For a moment, he could see himself leaving college at the end of his junior year to sign a million-dollar contract.

"I can always go back to college," he thought. "After all, with money, who needs a college degree?"

Terry could see his mother in her dream house. He even saw himself walking down the aisle with his childhood sweetheart.

Less than two minutes remained in the fourth quarter. The score was 96 to 94, with Terry's team trailing. The coach called "time out" and put Terry in the game.

"Terry's teammates didn't waste any time getting the ball to him. By now, the fans were on their feet yelling, "Score, Terry, score!"

"I have to win this game," Terry thought. "My whole life depends on it."

As he made a move to the basket, Terry's ankle twisted, and he fell. Two rival players went down with him.

The clock stopped. Suddenly the crowd stood still. Terry's two opponents got up, but Terry couldn't move. The coach and the paramedics ran to the floor and tried to help Terry stand up. But the pain in his knee wouldn't let him.

Terry was rushed to the hospital where the x-rays showed he had a fractured kneecap. The outlook was that Terry needed extensive knee surgery and would have to postpone his professional basketball career indefinitely.

While the doctor was explaining the surgery and suggesting another career, Terry's mind was far away. He was thinking about his former teammates who had given in to life's bad breaks. Then his mind went to Dirk Jones, his idol, who had beaten the odds.

A doctor had told Dirk that he might never play ball again. But Dirk hadn't given up. With his coach's help, Dirk found a doctor who was able to perform the delicate surgery. The surgery was combined with a vigorous rehabilitation program. Together, they restored the strength and endurance of Dirk's knee. As a result, Dirk was back on the court within a year.

Terry's doctor continued to discourage Terry about a pro career. "Being a science teacher isn't a bad idea...You've got the necessary health credits," he said.

"I'm gonna play pro ball, Doc," Terry said. "I may be down now, but I'm not down for the count!"

1. What do you think causes Terry's fall? ________________________________

2. What are the effects of Terry's fall? ________________________________

3. According to the passage, what could be the effect if a knee injury is treated promptly and a rehabilitation plan is followed?

a. An athlete's knee will heal in three months.
b. An athlete's disability will last for about a year.
c. Sports medicine will be a popular field in which to specialize.
d. Athletes will not need to wear knee braces.

4. The statement that Terry is "down but not down for the count" suggests that he

a. is not giving up on his career goal
b. will settle for becoming a science teacher
c. is listening to the doctor's pep talk
d. is thinking about his broken dreams

5. Why is "Against the Odds" an appropriate title for this story?

Sequence

Read the story below, and complete the activity that follows.

Senior Fights Back

Early one Tuesday morning just before daybreak, 66-year-old Sally Duncan was taking her usual morning walk in the park, when a lanky teenager suddenly appeared.

He threatened her with a knife and demanded the coin purse that hung from her neck. When he found only a key, he slapped her. Sally asked him, "What are you going to do next, kill me? I bet your mother would be proud," she said.

The boy then told her to shut up and glanced at her fifty-dollar running shoes. They were a birthday present from her grandchildren.

"Take the shoes off," he demanded. "Or I'll cut 'em off." As Sally bent over, pretending to take off her shoes, she grabbed his wrist, forcing him to drop the knife. She kicked him in the groin. As he bent over, she belted him in the back with her elbow, and he fell to the ground.

From an apartment building nearby, a couple witnessed the entire scene and called the police, but not before they applauded Sally.

1. Arrange the following details in the order in which they occur in the story. Number the first event 1, the second 2, and so on.

_______ a. A boy threatened Sally and demanded her purse.
_______ b. Sally began her morning walk
_______ c. The boy found a key in Sally's purse.
_______ d. Sally tried to make the boy feel ashamed.
_______ e. Sally kicked and hit the boy to protect herself.
_______ f. The boy threatened to cut Sally's shoes off.
_______ g. The boy fell to the ground.
_______ h. Witnesses applauded Sally and called the police.

2. The *best* underlying message from this incident is

a. Crime Doesn't Pay
b. Looks Are Deceiving
c. Respect Your Elders
d. Better Luck Next Time

3. From the facts in the story, you can infer that

a. Sally's attacker wears the same size shoes as she does
b. Sally is poor
c. Sally has taken self-defense training
d. Sally is stronger than the boy

4. Based on the events that occurred in the story, you can reasonably predict that

a. the boy will never attack another elderly woman again
b. the boy will be booked for attempted armed robbery
c. Sally will never again take a walk in the park at daybreak
d. Sally will refuse to press charges against the boy

Comparison and Contrast

In the passage below, certain phrases are missing. Some of the phrases are similar to each other in meaning and some are opposite. Read the passage and fill in the blanks with the phrase that best completes the idea. Use the following phrases:

he who hesitates is lost
you're never too old to learn
a bird in the hand is worth two in the bush
out of sight, out of mind
still waters run deep
no news is good news

Friends' Advice

Connie has trouble thinking for herself. She relies on the advice of her close friends Jan and June to help her through a crisis. The only problem is that the advice Jan gives often conflicts with June's advice.

For example, when Connie's boyfriend joined the army, she feared losing him because of the length of time they'd be separated. Jan told Connie to cheer up because the separation would make their love stronger. She said, "Absence makes the heart grow fonder." But June told Connie not to be a fool. "If John doesn't see you every day, he'll forget about you. Absence makes the heart go *wander*. You've heard that old saying,

"____"
1

Weeks passed, and John didn't call or write. Connie feared the worst. Jan comforted her. She wanted to tell her friend that *what you don't know can't hurt you*. Instead, she offered these similar words of encouragement:

"____"
2

With John gone, Connie found herself with a lot of time on her hands. She'd always wanted to learn to play the piano but figured she had gotten too old. She knew she could count on Jan to encourage her to take lessons. Upbeat Jan advised her to go ahead. She said,

"____"
3

June, on the other hand, told her not to waste her money. Everybody knows that *"you can't teach and old dog new tricks,"* she told Connie.

Lonely because she hadn't heard from John, Connie brooded in her room. One day Dave asked her out for a date, even though she knew Dave was dating Mary. "Don't risk your relationship with John," Jan warned her. "What if he finds out? You might end up losing him. It's better to have something you can call your own than to dream about what you can't have. You know what they say:

"____"
4

June told Connie to ignore Jan's warning. "Jan never takes a risk," she reminded Connie. "Take it from me, *nothing ventured, nothing gained*."

Connie was confused when Dave asked her out. What should she do? She knew what Jan would say: "You'd better look before you leap." But Connie decided to listen to June's advice this time. She decided to take the plunge, to take a chance. Time and again she'd been told,

" ______________________________ "
5

When Jan heard about Connie's unfaithfulness, she was shocked. It wasn't like Connie. Certainly not the quiet, indecisive Connie she knew. But June said, *"You can't judge a book by its cover."* After all,

" ______________________________ "
6

7. The phrases used in the passage above are called platitudes. Platitudes are tiresome sayings or advice people sometimes give. The lesson of the above passage is that

a. platitudes can be useful
b. it's always best to make your own decisions
c. never rely on the advice of friends
d. for most platitudes, it's easy to find an opposite

8. In the passage, two pairs of platitudes are similar to one another. Write each pair.

a. ______________________________
____

b. ______________________________
____

9. Compare and contrast the natures of Jan and June. How are they alike? How are they different? Who is the "true" friend?

____
____
____

THINK & WRITE: Throughout the passage, you worked with pairs of platitudes. Some were similar, and some were different. Can you think of another pair of platitudes that are either similar or opposite in meaning?

Invalid Conclusions

In the following excerpt from *Twelve Angry Men,* jurors (identified by numbers) discuss the fate of a young man who has been accused of murder. Read the excerpt. Then complete the activity that follows.

EIGHT: There were eleven votes for guilty. It's not easy for me to raise my hand and send a boy off to die without talking about it first.

SEVEN: Who says it's easy for me?

EIGHT: No one.

SEVEN: What, just because I voted fast? I think the guy's guilty. You couldn't change my mind if you talked for a hundred years.

EIGHT: I don't want to change your mind, I just want to talk for a while. Look, this boy's been kicked around all his life. You know, living in a slum, his mother dead since he was nine. That's not a very good head start. He's a tough angry kid. You know why slum kids get that way. Because we knock 'em on the head once a day, every day. I think we owe him a few words that's all.

[He looks around the table. Some of them look back coldly. Some cannot look at him. Only NINE nods slowly. TWELVE doodles steadily. FOUR begins to comb his hair]

TEN: I don't mind telling you this, mister. We don't owe him a thing. He got a fair trial, didn't he? You know what that trial cost? He's lucky he got it. Look, we're all grownups here. You're not going to tell us that we're supposed to believe him, knowing what he is. I've lived among 'em all my life. You can't believe a word they say. You know that.

NINE: *[to TEN very slowly]* I don't know that. What a terrible thing for a man to believe. Since when is dishonesty a group characteristic? You have no monopoly on the truth.

THREE: *[interrupting]* All right. It's not Sunday. We don't need a sermon.

NINE: What this man says is very dangerous.

[EIGHT puts his hand on NINE's arm and stops him. Somehow his touch and gentle expression calm the old man. He

draws a deep breath and relaxes.]

FOUR: I don't see any need for arguing like this. I think we ought to be able to behave like gentlemen.

SEVEN: Right!

FOUR: If we're going to discuss this case, let's discuss the facts.

FOREMAN: I think that's a good point. We have a job to do. Let's do it.

1. Which of the following is an invalid conclusion suggested in the passage?

a. Getting knocked in the head is a daily occurrence for teenagers who live in disadvantaged areas.
b. Teenagers living in urban areas have many obstacles to overcome.
c. Teenagers from upper middle class families usually aren't abused.
d. To develop socially and emotionally, children need the love and support of both parents.

2. The conclusion you checked above is invalid because

a. it goes against the facts presented in the play
b. not enough facts are given to support it
c. it has no bearing on the verdict that has to be given
d. it is true only in a limited number of cases

3. Which juror appears to show the most concern for the defendant?

____

4. Which juror appears to show the least concern?

____

Values

As you read the following story by Juan A.A. Sedillo, consider the kinds of values being shown. Then answer the questions that follow.

The Gentleman of Rio en Medio

It took months of negotiation to come to an understanding with the old man. He was in no hurry. What he had the most of was time. He lived up in Rio en Medio, where his people had been for hundreds of years. He tilled the same land they had tilled. His house was small and wretched, but quaint. The little creek ran through his land. His orchard was gnarled[1] and beautiful.

The day of the sale he came into the office. His coat was old, green and faded. I thought of Senator Catron, who had been such a power with these people up there in the mountains. Perhaps it was one of his old Prince Alberts[2]. He also wore gloves. They were old and torn and his fingertips showed through them. He carried a cane, but it was only skeleton of a worn-out umbrella. Behind him walked one of his innumerable[3] kin - a dark young man with eyes like a gazelle[4].

The old man bowed to all of us in the room. Then he removed his hat and gloves, slowly and carefully. Chaplin once did that in a picture, in a bank - he was the janitor. Then he handed his things to the boy, who stood obediently behind the old man's chair.

There was a great deal of conversation, about rain and about his family. He was very proud of his large family. Finally we got down to business. Yes, he would sell, as he had agreed, for twelve hundred dollars, in cash. We would buy, the money was ready. "Don Anselmo," I said to him in Spanish, "we have made a discovery. You remember that we sent that surveyor, that engineer, up there to survey your land so as to make the deed. Well, he finds that you own more than eight acres. He tells us that your land extends across the river and that you own almost twice as much as you thought." He didn't know that. "And now, Don Anselmo," I added "these Americans are buena gente, they are good people, and they are willing to pay you for the additional land as well, at the same rate per acre, so that instead of twelve hundred dollars you will get almost twice as much, and the money is here for you."

The old man hung his head for a moment in thought. Then he stood up and stared at me. "Friend," he said, " I do not like to have you speak to me in that manner." I kept still and let him have his say. "I know these Americans are good people, and that is why I have agreed to sell my house to them. But I do not care to be insulted. I have agreed to sell my house and land for twelve hundred dollars and that is the price."

[1] gnarled - twisted
[2] Prince Albert -a long doublebreasted coat
[3] innumerable - many
[4] gazelle - a deerlike animal

I argued with him but it was useless. Finally he signed the deed and took the money but refused to take more than the amount agreed upon. Then he shook hands all around, put on his ragged gloves, took his stick and walked out with the boy behind him.

A month later my friends had moved into Rio en Medio. They had replastered the old adobe house, pruned the trees, patched the fence, and moved in for the summer. One day they came back to the office to complain. The children of the village were overrunning their property. They came every day and played under the trees, but little play fences around them and took blossoms. When they were spoken to they only laughed and talked back goodnaturedly in Spanish.

I sent a messenger up to the mountains for Don Anselmo. It took a week to arrange another meeting. When he arrived he repeated his previous preliminary[5] performance. He wore the same faded cutaway, carried the same stick and was accompanied by the boy again. He shook hands all around, sat down with the boy behind his chair, and talked about the weather. Finally I broached[6] the subject. "Don Anselmo, about the ranch you sold to these people. They are good people and want to be your friends and neighbors always. When you sold to them you signed a document, a deed, and in that deed you agreed to several things. One thing was that they were to have the complete possession of the property. Now, Don Anselmo, it seems that every day the children of the village overrun the orchard and spend most of their time there. We would like to know if you, as the most respected man in the village, could not stop them from doing so in order that these people may enjoy their new home more in peace."

Don Anselmo stood up. "We have all learned to love these Americans," he said, "because they are good people and good neighbors. I sold them my property because I knew they were good people, but I did not sell them the trees in the orchard."

This was bad. "Don Anselmo," I pleaded, "when one signs a deed and sells real property one sells also everything that grows on the land, and those trees, every one of them, are on the land inside the boundaries of what you sold."

"Yes I admit that," he said. "You know," he added. "I am the oldest man in the village. Almost everyone there is my relative and all the children of Rio en Medio are my sobrinos and nietos, my descendants. Every time a child has been born in Rio en Medio since I took possession of that house from my mother I have planted a tree for that child. The trees in that orchard are not mine, Senor, they belong to the children of the village. Every person in Rio en Medio born since the railroad came to Santa Fe owns a tree in that orchard. I did not sell the trees because I could not. They are not mine."

[5] preliminary -coming before
[6] broached - brought up in conversation

There was nothing we could do. Legally we owned the trees but the old man had been so generous, refusing what amounted to a fortune for him. It took most of the following winter to buy the trees, individually, from the descendants of Don Anselmo in the valley of Rio en Medio.

1. According to the story, which of the following summarizes Don Anselmo's values?

a. Don Anselmo is more concerned about money than he is about family.
b. Don Anselmo is kind only to people born in Mexico.
c. Don Anselmo is a man of his word who values family more than money.
d. Don Anselmo is a man who can't be trusted because he betrayed the Americans as well as his family.

2. Write two sentences directly from the story that show that Don Anselmo is a mannerly, dignified man.

a. ____

____

b. ____

____

3. What do the Americans finally do to demonstrate that they respect the generosity and family loyalty of Don Anselmo?

____

____

4. What legal action could the Americans have taken to stop their property from being overrun? ____________________

____

5. Which of the following statements summarizes why the Americans are surprised by Don Anselmo's value system?

a. In the United States, a seller gets as much money as possible for his or her property.
b. The Americans thought that perhaps Don Anselmo didn't really own the land and that he was trying to trick them.
c. The Americans are surprised because American children do not value playing under trees, building fences, and picking flowers.
d. The "gentleman" is rich and does not need to take advantage of their generosity.

6. The story is title "Gentleman of Rio en Medio" because the main character

a. is a man who wanted to sell his property
b. does not value land in the forest
c. is polite, loyal, considerate, and respected
d. is shrewd, calculating, inflexible, and stubborn

7. Don Anselmo's attitude toward property and ownership is most similar to the attitude of which people who believe that land can belong to no man?

a. Europeans
b. Native American Indians
c. Japanese

Fact, Opinion and Hypothesis

The title of the anecdote below introduces the term *yankee gringo,* which is used in Latin America to describe a foreigner, especially one of English or U.S. origin. Read the anecdote and answer the questions that follow.

Curious Tourist, Yankee Gringo

The train is traveling from Los Mochis to Chihuahua, a route that covers over 415 miles of Mexico. The passengers riding the Copper Canyon Railroad are taking in the scenic route to the Topolobampo Bay on the Sea of Cortez.

Sarah and Sid Johnson, Americans from Cincinnati, Ohio, are touring Mexico by train to learn the culture of the natives. Along the way, Sid is reading *The Old Gringo* by Carlos Fuentes and is studying Mexican cuisine. Dressed in travel gear (shorts and bikini top), Sarah is taking a "crash course" in Spanish by reading El Dia.

Just across the aisle in the tourist-class compartment sit Julia and Miguel Garcia-Marquez. On their first-anniversary holiday, they are going to meet relatives near the popular Puerto al Pacifico Resort.

Julia and Miguel snicker softly as the Johnsons hide their money belt from their companions in the train car. Julia points out to her husband the diamond engagement ring and wedding band that Sarah wears on her left hand and compares them to her own simple gold band to her husband. She refers to the couple as "Yankee gringo" as the train glides through the twilight.

Sarah, speaking in slow and halting Spanish, addresses

Julia: "Do you have change for *cincuenta mil pesos?*[1] I want to have coins for the poor beggar boys at the station. They are so cute- and needy." Miguel, in clear American English, replies, "With the current rate of inflation, those darling kids need dollar bills." Adds Julia, "If you Americans really wanted to help those 'cute and needy' kids, you'd give their parents jobs in your country."

1. Which of the following statements is a hypothesis that may be based on the passage?

a. If their parents had jobs, many Mexican children would not have to beg American tourists for money.
b. Mexicans do not earn enough money to support their families.
c. To improve living conditions in Mexico, more foreign aid is needed.
d. As soon as Julia and Miguel save more money, they will go to the United States.

2. Write *F* before the statements that are facts and *O* by those that are opinions.

______a. Mexican food is tastier than Puerto Rican food.
______b. Julia and Miguel have been married for a year.
______c. Sarah and Sid are riding in the tourist-class car of the train.
______d. Mexican beggar boys are cute.
______e. Inflation has reduced the value of the peso.

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[1] 500 pesos

SIMULATED GED TESTS

Interpreting Literature and the Arts Test A

DIRECTIONS

What Kind of Questions? The Interpreting Literature and the Arts Test consists of 45 excerpts from classical and popular literature and articles about literature or the arts. Each excerpt is followed by multiple-choice questions about the reading material.

How To Proceed: Read each excerpt first and then answer the questions following it. Refer back to the reading material as often as necessary in answering the questions. Each excerpt is preceded by a "purpose question." This helps you focus on the main ideas presented. Use these questions to guide your reading. You are not required to answer the purpose questions.

How Long Is It? The test is timed. You should spend no more than 65 minutes answering the 45 questions on this test. Work carefully, but do not spend too much time on any one question. Be sure you answer every question. Incorrect answers will not count against you.

How To Mark Answers: Record your answers on the separate answer sheet provided. To record each of your answer, mark the numbered space on the answer sheet beside the number that corresponds to the question to the test. The following example has been done for you.

EXAMPLE
They were the time-savers. The microwave oven cooked food quickly and easily. The food processor chopped vegetables efficiently and mixed dough twice as fast as could be accomplished by hand. The blender easily crushed ice and mixed drinks in a frothy fashion.

The subject of this excerpt (They) is most likely
(1) microwave ovens
(2) dining room furniture
(3) modern kitchen appliance
(4) blenders
(5) food processors 1 2 3 4 5

The correct answer is modern kitchen appliances; therefore, answer space 3 should be marked on the answer sheet.

Virginia A. Lowe, Literature and the Arts Exercise Book (Austin: Steck-Vaughn Company, 1990) pp. 54-67, 25, 40, 53.

Do not make any stray or unnecessary marks on the answer sheet. If you change an answer, erase your first mark completely. Mark only one answer space for each question. Multiple answers will be scored as incorrect.

You may now begin Test A.

Directions: Choose the one best answer to each item.

Items 1-5 refer to the following passage from "A Child's Day," a short story by Jessamyn West.

WHO WAS FRIGHTENED BY A KNOCK AT THE DOOR?

The footsteps came on inexorably, turned out of the road onto the graveled walk, then proceeded quickly and resolutely to the front door. First there was a light, insistent knock, then the latched screen door was heavily shaken.

"He must have a force with him," Minta thought, "He is so bold," and waited for the crash of splintering boards, and braced her body for the thrust of cold steel that would follow. She thought fleetingly of Clenmie, and of her father and mother, and wondered if any sudden coldness about their hearts warned them of her plight.

The screen door shook again, and a woman's voice, old and quiet, called out, "Is there anyone there? I say, is there anyone home?" and ceased.

Slowly, cautiously Minta crept to the living room, lifted the side of the green blind. Old Mrs. Beal, her Sunday black billowing in the wind, was homeward bound from dinner with her daughter.

"I saw it was old Mrs. Beal on her way home from her daughter's," she told her father, giving him as much truth as she thought he could handle.

"Minta, you can get to the door fast enough when some of your friends are calling."

"I was busy," replied Minta with dignity. Her father looked at her doubtfully, but said no more.

Her mother combed out Clenmie's soft,

white hair with her rhinestone back comb. "Did you forget to feed Brownie?" she asked.

"Of course I fed Brownie. I'll never forget her. She's my dearest friend."

Against the warm reality of Mrs. Beal's broad, homeward-board back, the world that had been cold and full of danger dissolved. The dear room; her books, her papers; Clenmie's toys; Mother's tissue cream on of top of the piano; the fire sending its lazy red tongue up the chimney's black throat.

She stood warming herself, happy and bemused, like a prisoner unexpectedly pardoned. Then she heard again the click, click she had not recognized. Brownie at the back door!

1. What is suggested by the last sentence in this excerpt?

(1) that Minta was hard of hearing
(2) how much Minta loved her pet
(3) that Minta really had forgotten Brownie
(4) that Minta was afraid of Brownie
(5) how much of a liar Minta was

2. What is the effect of putting part of this excerpt into italics (Lines 25-40)?

(1) The reader can see into Minta's past.
(2) The reader is able to see into Minta's future.
(3) What Minta imagines her future to be is made clear to the reader.
(4) The reader understands why Minta was so cautious about Mrs. Beal.
(5) It emphasizes how busy Minta was.

3. The "thrust of cold steel" (line 10) that Minta braces herself for refers to

(1) the opening door
(2) the unlatching of the screen
(3) a piercing bullet
(4) a stabbing knife
(5) the fear in Minta's heart

4. The inexorable footsteps (line 1) belong to

(1) a burglar
(2) a group of forceful men
(3) Mrs. Beal
(4) Mrs. Beal's daughter
(5) a woman in trouble

5. What effect does the sight of Mrs. Beal's back have on Minta?

(1) She feels lonely.
(2) She begins to worry about her father and Clenmie.
(3) She is no longer afraid to be alone in the house.
(4) She starts to get cold.
(5) Her world becomes dangerous.

Items 6-11 refer to the following excerpt from an article, "Truth Isn't Stranger Than Science Fiction, Just Slower," by Isaac Asimov.

HOW DID WE EVER GET INTO SPACE?

Will faster-than-light travel be possible? My inclination is to say "No," though I know it is unwise to be too categorical in such things. Back in 1928, Edward E. Smith wrote "The Skylark of Space," the first story of interstellar travel using faster-than-light speeds. He invented the inertialess drive, which is probably impossible and which, in any case, would only achieve light-speed, nothing more. Still, the principle remains.

What kind of mind is required to think of things to come a generation and more ahead? Nothing unusual, judging by my own. It's just a matter of knowing science and technology and the way they have developed, and of thinking what the next steps might logically be - and thinking and thinking. People expect dramatic shortcuts, but it all boils down to the dull, hard work of thought.

Which doesn't mean that science fiction writers have anticipated everything. Their record isn't that good.

For instance, they concentrated on space flight under direct human control and never realized what could be done by remote-controlled probes. They foresaw computers but missed their true role in space flight. No one, for example, predicted the advent of the microchip, the computer's compactness and versatility, and how essential it would become to piloting, say a shuttle.

6. According to the article, Edward E. Smith was probably

(1) a rocket scientist
(2) a space-flight technician
(3) a computer expert
(4) an astronaut
(5) a science fiction writer

7. According to the excerpt, Asimov believes

(1) scientific advances are always predicted in science fiction
(2) faster-than-light travel is possible
(3) only a genious can anticipate the future
(4) there is an intellectual relationship between science fiction and science fact
(5) science fiction writers know nothing about the way science really works

8. What does Asimov see at the major flaw of the "inertialess drive" (line 8)?

(1) It is clearly impossible.
(2) It won't lead to interstellar travel.
(3) It was invented by Edward E. Smith.
(4) It was invented too early for true space technology.
(5) It would only reach the speed of light.

9. Why does this passage begin with the question "Will faster-than-light travel be possible?" (line 1)?

(1) to prepare for an explanation of interstellar travel
(2) as a link between fact and imagination
(3) to introduce a scientific discussion
(4) so the author can argue against it
(5) as an example of where science fiction writers fail

10. When Asimov says "it is unwise to be too categorical" (line 3), he means that one should not

(1) believe what can't be seen
(2) classify things
(3) be too organized
(4) deny something absolutely
(5) make a list of qualities

11. It can be inferred from this excerpt that Asimov

(1) disapproves of most science fiction writers
(2) thinks that science is more important than science fiction
(3) reads a lot of science fiction
(4) has never written science fiction himself
(5) has little imagination

Items 12-17 refer to the following poem by Alice Walker.

WHO IS GOING WHERE?

Even As I Hold You

Even as I hold you
I think of you as someone gone
far, far away. Your eyes the color
of pennies in a bowl of dark honey
bringing sweet light to someone else
your black hair slipping through my fingers
is the flash of your head going
around a corner
your smile, breaking before me,
the flippant last turn
of a revolving door,
emptying you out, changed,
away from me.

Even as I hold you
I am letting go.

12. When the poet writes "as someone gone far, far away" (lines 2-3), she is preparing the reader for

(1) the image of the bowl of honey
(2) the idea of a revolving door
(3) a major tragedy
(4) a bitter parting
(5) the last line of the poem

13. Which of the following emotions is the poet probably trying to portray?

(1) bitter anger
(2) solemn indifference
(3) grateful relief
(4) loving regret
(5) unequaled joy

14. Which of the following subjects would this poet be most likely to write about in other poems?

(1) the brutal nature of human beings
(2) the beauty of a landscape
(3) understanding in human relationships
(4) the horrors of war
(5) the glories of war

15. Why does the speaker describe the other person's hair, eyes, and smile?

(1) Those are what attracted her to him in the first place.
(2) They are what the reader expects to read about.
(3) They are simple to describe.
(4) These would be most prominent when up close.
(5) They are all symbols of leaving.

16. The speaker is talking to someone whose eyes are

(1) looking away
(2) brown
(3) blue
(4) shut
(5) sad

17. The speaker in this poem is probably

(1) getting ready to leave
(2) in love with someone else
(3) totally unselfish
(4) regretting her decision
(5) preparing herself for being alone

Items 18-23 refer to the following excerpt from *'Night, Mother*, a play by Marsha Norman.

WHY DID JESSIE ORDER A CASE OF SNOWBALLS?

JESSIE: We got any old towels?

MAMA: There you are!

JESSIE: *(holding a towel that was on the stack of newspapers)*: Towels you don't want anymore. *(picking up Mama's snowball wrapper.)* How about this swimming towel Loretta gave us? Beach towel, that's the name of it. You want it? *(Mama shakes her head no.)*

MAMA: What have you been doing in there?

JESSIE: And a big piece of plastic like a rubber sheet or something. Garbage bags would do if there's enough.

MAMA: Don't go making a big mess, Jessie. It's eight o'clock already.

JESSIE: Maybe an old blanket or towels we got in a soap box sometime?

MAMA: I said don't make a mess. You hair is black enough, hon.

JESSIE: *(continuing to search the kitchen cabinets, finding two or three more towels to add to her stack):* It's not for my hair, Mama. What about some old pillows anywhere, or a foam cushion out of a hard chair would be real good.

MAMA: You haven't forgot what night it is, have you? *(holding up her finger nails.)* They're all clipped, see? I've been waiting all week, Jess. It's Saturday night, sugar.

JESSIE: I know. It got it on the schedule.

MAMA (crossing to the living room): You want me to wash 'em now or are you making your mess first? (looking at the snowball.) We're out of these. Did I say that already?

JESSIE: There's more coming tomorrow. I ordered you a whole case.

MAMA (checking the TV guide): A whole case will go stale, Jessie.

JESSIE: They can go in the freezer till you're ready for them. Where's Daddy's gun?

MAMA: In the attic.

JESSIE: Where in the attic? I looked your whole nap and couldn't find it anywhere.

18. The stage directions in this scene suggest that the conversation is taking place primarily

(1) in an attic
(2) at night
(3) in a kitchen
(4) at the beach
(5) in a living room

19. If Jessie were to tell Mama something very unusual, how would Mama probably react?

(1) She would listen carefully.
(2) She would give Jessie only some of her attention.
(3) She would be shocked.
(4) She would go up to the attic and get the gun.
(5) She would get angry.

20. Why does the author have Jessie look for towels, plastic, a pillow, and a gun?

(1) to suggest how untidy Jessie is
(2) as a contrast to Mama eating snowballs
(3) to show how she prepares for Saturday nights
(4) because she is going to dye her hair
(5) to make the audience wonder what Jessie is planning to do

21. In which of the following ways does the author set up the relationship between these two women?

(1) through a statement in the stage directions
(2) by having them argue
(3) by having them carry on what are almost two separate conversations
(4) by revealing how much Mama is concerned about being out of snowballs
(5) by having the two directly say how they feel about each other

22. What does Jessie usually do for Mama on Saturday nights?

(1) dye her hair
(2) buy her more desserts
(3) take her out on the town
(4) redo her fingernail polish
(5) get a new TV Guide

23. It can be inferred from this excerpt that Mama

(1) is quite attractive
(2) is fairly lazy
(3) misses her husband
(4) wants to go to bed soon
(5) is a patient person

Items 24-28 refer to the following passage from *The Grapes of Wrath*, a novel by John Steinbeck.

WHAT IS THIS MAN PROUD OF?

He loved the land no more than the bank loved the land. He could admire the tractor - its machined surfaces, it surge of power, the roar of its detonating cylinders; but it was not his tractor. Behind the tractor rolled the shining disks, cutting the earth with blades - not plowing but surgery, pushing the cut earth to the right where the second row disks cut it and pushed it to the left; slicing blades shining, polished by the cut earth. And pulled behind the disks, the harrows combing with iron teeth so that the little clods broke up and the earth lay smooth. The driver sat in his iron seat and he was proud of the straight lines he did not will, proud of the tractor he did not own or love, proud of the power he could not control. And when that crop grew, and was harvested, no man had crumbled a hot clod in his fingers and let the earth sift past his fingertips. No man had touched the seed, or lusted for the growth. Men ate what they had not raised, had no connection with the bread. The land bore under iron, and under iron gradually died; for it was not loved or hated, it had no prayers or curses.

24. Which of the following best described the activity of the man in this excerpt?

(1) harvesting the grain
(2) performing surgery
(3) plowing a field
(4) admiring the land
(5) touching the earth

25. What is suggested by the comparison in the first sentence?

(1) the bank loves the land more than the man does.
(2) The man cares very much about the land.
(3) Both the man and the bank see the land only as a source of income.
(4) The man has borrowed heavily from the bank in order to pay for the land.
(5) Both the man and the bank have emotional investments in the land.

26. What is meant by the word iron (line 25) in the last sentence?

(1) the seat of the tractor
(2) the tractor and other farm machines
(3) the iron fist of the driver
(4) the farmer's strength
(5) the metal deposits in the field

27. Why does the author end the passage with "for it was not loved or hated, it had no prayers or curses" (lines 26-27)?

(1) to suggest that the land is personal
(2) to explain why the man felt as he did about the land
(3) to suggest that a person must be emotionally involved in order for the land to thrive
(4) to suggest that farmers don't need to either pray or curse to raise good crops
(5) to reveal that the tractor driver was not religious

28. Which of the following words best expresses this man's attitude toward the crop that will be planted?

(1) love
(2) hatred
(3) greed
(4) admiration
(5) indifference

Items 29-34 refer to the follow excerpt from "Annabel Lee," a poem by Edgar Allan Poe.

WHAT HAPPENED LONG AGO?

Annabel Lee

It was many and many a year ago,
In a kingdom by the sea,
That a maiden there lived whom you may know
By the name of ANNABEL LEE;
And this maiden she lived with no other thought
Than to love and be loved by me.

I was a child and she was a child,
In this kingdom by the sea;
But we loved with a love that was more than love -
I and my ANNABEL LEE:
With a love that the winged seraphs of heaven
Coveted her and me.

And this was the reason that, long ago,
In this kingdom by the sea,
A wind blew out of cloud, chilling
My beautiful ANNABEL LEE;
So that her high-born kinsman came
And bore her away from me,
To shut her up in a sepulchre
In this kingdom by the sea.

The angels, not half so happy in heaven,
Went envying her and me -
Yes! - that was the reason (as all men know,
In this kingdom by the sea)
That the wind came out of the cloud by night,
Chilling and killing my ANNABEL LEE.

29. The special nature of the "love that was more than love" (line 9) is emphasized by

(1) the fact that the lovers were children
(2) the envy of the angels
(3) the tragedy of Annabel Lee's death
(4) the lovers' royalty
(5) the chilling wind that separated the pair

30. Based on the tone of this poem, the speaker will most likely

(1) forget about Annabel Lee
(2) murder Annabel's kinsman
(3) attend church regularly
(4) continue to mourn his lost love
(5) visit Annabel's family

31. If Annabel Lee had survived her chill, she would most likely have then

(1) gone home to her family
(2) decided to become a nurse
(3) become the speaker's devoted wife
(4) become very religious
(5) decided to be an independent woman

32. What is the poet's primary method for setting the mood in this poem?

(1) referring to the wind
(2) capitalizing Annabel Lee's name
(3) putting the tragedy in the past tense
(4) repeating "a kingdom by the sea"
(5) making the cause of death unknown

33. Which of the following is suggested about the speaker?

(1) He never looks back.
(2) He has forgotten Annabel's name.
(3) He is not affected by life's sorrows.
(4) He is ready for another relationship.
(5) He still loves Annabel Lee.

34. The sepulchre (line 19) is most probably

(1) a prison
(2) a deep grave
(3) an elaborate tomb
(4) a haunted castle
(5) an open casket

Items 35-40 refer to "An American Tragedy," a book review by Jim Miller.

WHY WAS THIS MAN IN THE COLD WAR?

In his heyday, between 1925 and 1945, Paul Robeson was a celebrated singer and actor and a prominent symbol of the country's hopes for racial progress. But today Robeson is perhaps best known as a cold-war martyr - an outspoken admirer of Soviet communism who refused to disavow his political convictions despite a decade of government harassment.

In this first major biography of Robeson, historian Martin Duberman draws on a rich array of manuscripts and interviews. A modern-day Renaissance man - he was an All-America football player at Rutgers, an actor in Eugene O'Neill's plays, a star in "Showboat" - Robeson in the '20s and early '30s hobnobbed with the smart set in New York, London and Paris. That all changed after he went to Moscow in 1934 to discuss making a film with director Sergei Eisenstein. The Soviet Union bowled him over. "Here I am not a Negro but a human being," declared Robeson. "Here, for the first time in my life, I walk in full human dignity." Proud to call himself "A rigid Marxist," Robeson publicly defended every twist and turn in communist policy. The Soviet Union under Stalin he once compared to a football team: "The coach tells you what to do and we do it." Robeson eventually paid dearly for his convictions: in a sad American parody of Soviet injustice, he became a prisoner in his own land in the 1950's when the State Department denied him a passport because of his political beliefs, an action The Supreme Court ruled unconstitutional in 1957.

Duberman calls Robeson's life "the American tragedy writ large." But that is only half the story. For what Duberman also has given us in this fine biography is also the communist tragedy writ large: a pathetic tale of talent sacrificed, loyalty misplaced and idealism betrayed.

35. Which of the following is true according to this review?

(1) Robeson was killed in a war.
(2) No major biographies of Robeson were published before Duberman's.
(3) Robeson went unrecognized throughout his life.
(4) Robeson moved to the Soviet Union.
(5) Stalin was an avid football fan.

36. If Paul Robeson had been born thirty years later, he would probably have been

(1) less outspoken in his political convictions
(2) an actor in Eisenstein's films
(3) unknown as an actor or singer
(4) a supporter of the civil rights movement
(5) betrayed by the Soviet Union

37. Which of the following famous people would Robeson probably have most admired?

(1) Adolf Hitler
(2) Cesar Chavez
(3) Queen Elizabeth II
(4) Ronald Reagan
(5) Carl Sandburg

38. What does the reviewer mean when he uses the phrase "a tragedy writ large" (line 40)?

(1) that Robeson's story is a major example of a human problem
(2) that belief in communism will lead to failure and despair
(3) that Robeson's entire life was tragic
(4) that one political system will often parody another's injustice
(5) that Robeson was wrong to admire Soviet communism while living in America

39. What happened to Robeson because he openly supported communism?

(1) He was put in prison.
(2) He lost his self-respect.
(3) His contract with Eisenstein fell through.
(4) He was no longer allowed to leave the United States.
(5) He lost his talent.

40. Why was Robeson more impressed with the Soviet Union than with the United Sates?

(1) Moscow offered better career opportunities
(2) The Soviet Union reminded him of London and Paris.
(3) The communist policy encouraged individual creativity.
(4) In the United States he felt trapped by racial prejudice.
(5) He was following the Marxist fashion of the smart set.

Items 41-45 refer to the following excerpt from "Stupid Emcee Tricks," a TV program review by Rick Kogan.

WHY WAS THE STUDIO PACKED?

"How much time do I have?" he says. "Two minutes," comes a voice.

He proceeds to take a cigar offered by a young man and be stunned by the number of people in this crowd from Alabama. He is relaxed and amiable.

For many of the 200 people sitting in the studio and for millions more at home, Letterman has become a generation's symbol. It's not hard to imagine any number of master's theses exploring Letterman's appeal - scholars not only of television but of society and culture as well, icon-hunting.

Earlier this year, a *Rolling Stone* writer exploded thusly: "The America [Letterman] talks about is dumb (stupid in Letterman-speak); it is sublime. He reveals in Americans; he is mad at Americans. He is the captivated, furious observer of the wild framed portrait that is American television - he has watched it closer than you and I, and it drives him crazy. So he fights with American inertia, stick by stick of furniture, guest by guest. This is how David Letterman has chosen to come into the Nineties. It's a nutty, crazy, Oval Office kind of thing."

Whew...But everybody tries to capture David.

"Letterman's playing to an audience that loves to see the world stood on its head," writes *Playboy*.

"Hip, irreverent, self-parodying, both scornful of and fascinated by the cliches of show business," writes *Time*.

Some of that is true, but the qualities one observes in a short encounter with David Letterman may come closer to defining his appeal. He's bright, quick, friendly, funny and frank.

41. According to this review, which word best describes David Letterman in front of a studio audience?

(1) nervous
(2) speechless
(3) explosive
(4) calm
(5) stupid

42. The phrase "wild framed portrait" (line 21) describes

(1) an actual TV set and picture
(2) the medium as a whole
(3) the TV industry
(4) a picture on a wall
(5) the concept of TV

43. The reviewer calls Letterman a "generation's symbol" (line 9-10) because the talk show host

(1) is very funny
(2) likes people from the South
(3) makes fun of silliness on TV
(4) has been the subject of master's theses
(5) loves Americans

44. The reviewer believes that some magazine comments about Letterman

(1) capture his personality exactly
(2) are written by people who don't like the man's personality
(3) are understated
(4) are completely untrue
(5) ignore the basic reason for his popularity

45. The quotations from the magazines are used by the reviewer

(1) to justify being a Letterman fan
(2) to criticize Letterman
(3) to explain Letterman's popularity in Alabama
(4) to explain why Letterman gets into fights on his show
(5) as examples of efforts to define Letterman's personality

Interpreting Literature and the Arts Test A

Answers and Explanations

1. (3) (Inferential Comprehension) Earlier Minta had imagined herself saying she would never forget to feed Brownie, but she did forget. Although Options (2) and (5) may be true, they are not important here. There is no evidence for Options (1) and or (4).

2. (3) (Analysis) The italics help to mark the difference between reality and Minta's imagination. Option (2) is wrong because the future described exists only in Minta's mind. Option (1) is about the past, not the future. There is no support for Options (4) or (5).

3. (4) (Literal Comprehension) Minta imagines being stabbed after the door is broken in. Options (1) and (2) do not fit thrusting steel. The description would be odd for Option (3) and an awkward metaphor for Option (5).

4. (3) (Literal Comprehension) It is Mrs. Beal at the door. Only in Minta's imagination are Options (1) and (2) possible. Option (4) is wrong because the daughter is probably at home. There is no evidence for Option (5).

5. (3) (Inferential Comprehension) Minta is brought back to warm reality and is no longer afraid; therefore, Options (4) and (5) are wrong. There is no evidence for Options (1) and (2).

6. (5) (Inferential Comprehension) Smith is used as an example of science fiction writers who anticipate scientific achievements. There is no evidence that he was a scientist or was associated with actual space flight as suggested in the other options.

7. (4) (Literal Comprehension) Asimov states that he does not believe Options (1), (2), and (3). There is no support for Option (5).

8. (5) (Literal Comprehension) This information is stated in the first paragraph. Option (1) is too definite. Option (2) is not supported. Options (3) and (4) are true but are irrelevant to the question.

9. (2) (Analysis) Options (1) and (3) are wrong because he does not lead to a discussion of that questions itself. Option (4) is wrong because Asimov simply states an opinion and then moves to a related topic. Option (5) is wrong because only one writer is cited as having trouble with the question.

10. (4) (Literal Comprehension) This follows his denial and

precedes a qualifying remark. Options (1), (2), (3), and (5) would not make sense in this context.

11. (3) (Inferential Comprehension) His references indicate he is well-read in the field. He does not believe science fiction writers are always accurate, but that doesn't mean he disapproves (Option 1). Options (2) and (5) have no support. Option (4) is wrong because he uses himself as an example of the science fiction writer's mind.

12. (5) (Analysis) The phrase is the beginning of an explanation of how the speaker can let go. Options (1) and (2) bear no relation to the phrase. The poet is trying to convey a much different idea than those in Options (3) and (4).

13. (4) (Application) The speaker is anticipating the loss of her beloved but all the while is continuing to love. Options (1), (2), (3), and (5) suggest emotions not expressed in the poem.

14. (3) (Analysis) All the other options deal with generalities. The poet prepares to be more concerned with the nature of the individual.

15. (4) (Analysis) There is no evidence for Options (1) or (5). Option (3) is wrong because of the complexity of the descriptions. Option (2) would lessen the impact of the poem.

16. (2) (Literal Comprehension) Copper pennies in dark honey are brown. There is no evidence for the other options.

17. (5) (Inferential Comprehension) In recognizing that she cannot stop the person from leaving and in accepting the fact, she is preparing herself. There is no evidence for Options (1), (2), or (4). The speaker is somewhat selfish in that she is letting go slowly, so Option (3) is wrong.

18. (3) (Literal Comprehension) Options (1), (2), and (4) are not referred to in the direction. Option (5) is wrong because Mama crosses to the living room; we don't necessarily see her in it.

19. (2) (Application) Option (1) is the opposite of how Mama acts in this scene. There is no support for Options (3), (4), or (5).

20. (5) (Analysis) The collection of items is odd enough to suggest that Jessie is planning something unusual. Options (1) and (2) have no support. Option (3) is incorrect because Jessie shows little concern about Saturday night. Option (4) is denied by Jessie.

21. (3) (Analysis) The two women do seem to be talking about different subjects, indicating that there is an emotional distance between them. Although they don't ignore each other, they also don't

really pay attention. No support is given for Options (1) or (2). Option (4) reveals something about Mama only. Option (5) is wrong because neither expresses any emotion.

22. (4) (Inferential Comprehension) Mama refers to her chipped fingernails; Jessie admits that doing Mama's nails is on the schedule. There is no support for the other options.

23. (2) (Inferential Comprehension) Mama does not pick up the dessert wrapper or do her own nails. She also just took nap. There is no support for Options (1), (3), or (4). Option (5) is wrong because she nags Jessie.

24. (3) (Literal Comprehension) Option (1) is wrong because the crop is not yet grown. Surgery (Option 2) is a metaphor here for the impersonal plowing. Options (4) and (5) are opposite to the activity of the man in the excerpt.

25. (3) (Inferential Comprehension) By pairing the man with the bank, the author suggests they have the same attitude. Neither the man nor the bank love the land, as suggested by Options (1), (2), and (5). There is no evidence that the man even owns the land (Option 4).

26. (2) (Literal Comprehension) Although the seat is iron (Option 1), so is the rest of the tractor. Options (3) and (4) are not mentioned in the text. The land is under iron, so Option (5) is incorrect.

27. (3) (Analysis) Options (1) and (4) are wrong because the main idea is that land will die if treated impersonally. There is no evidence of why the man felt indifferent (Option 2) or whether he was religious (Option 5).

28. (5) (Inferential Comprehension) The man is uninterested in anything about the land or what it produces; therefore, there is no support for Options (1), (2), and (3). He admires only the machine (Option 4).

29. (2) (Analysis) The repetition of the angelic imagery is a clue to its importance. The speaker believes that even heaven was aware of the beauty of their love. Love is not made special by age (Option 1), by death (Option 3), by the cause of death (Option 5), or by status (Option 4).

30. (4) (Application) The speaker's moody reflection on Annabel Lee shows no sign of ending soon; therefore, Option (1) is wrong. The speaker is estranged from her family (Option 5), but Option (2) is too extreme a reaction. The speaker actually resents the angels' inference, so Option (3) is unlikely.

31. (3) (Application) Annabel Lee's only thought was to love and be loved by the speaker. There is no evidence to suggest Options (1) or (5). Options (2) and (4) suggest a type of selflessness that is not supported in the poem.

32. (4) (Analysis) Pay attention to repetition. This phrase occurs frequently and suggests mystery and romance because it reminds the reader of fairy tales without being specific. Although Option (1) may contribute to the overall mood, it is secondary to the repetition motif. Options (2) and (3) do no create mood. Option (5) is wrong because we know the death was caused by a chill.

33. (5) (Inferential Comprehension) He speaks with passion about what happened many years ago. Apparently he is still obssessed with recalling the love they shared. There is no support for Options (1), (2), (3), or (4).

34. (3) (Literal Comprehension) A noble person would have an elaborate final resting place. Options (1) and (4) are wrong because they suggest she is alive. Options (2) and (5) are wrong because of the phrase "shut up."

35. (2) (Literal Comprehension) This is stated in the text. There is no evidence for Options (1) or (5), and evidence is present to contradict Options (3) and (4).

36. (4) (Application) Robeson, as a Black man who feels he has not been recognized as a human being, would have been involved in the civil rights movement that began to make headlines in the 1950's. The time difference would have had little effect on his personality (Option 1) or his talent (Option 3). Eisenstein was no longer making films (Option 2). There is no evidence for Option (5).

37. (2) (Application) Cesar Chavez champions the cause for civil rights among the Hispanic people. Robeson most likely would have admired a person who struggled against great odds and the status quo in order to gain equal rights and restore a sense of dignity to his people. Although Options (3), (4), and (5) may have admirable qualities, they would probably have less appeal to Robeson. Hitler was a racial oppressor, a symbol of what Robeson hated (Option 1).

38. (1) (Analysis) Robeson was wronged by two systems of belief, not one in particular, as suggested by Options (2) and (5). Option (3) is not true. Option (4) is true but does not explain the phrase.

39. (4) (Literal Comprehension) The reviewer states that Robeson was denied a passport. There is no evidence for the other options.

40. (4) (Inferential Comprehension) Robeson felt free, with his

human dignity restored, when he visited the Soviet Union. There is no support for Options (1), (2), or (5). Option (3) is wrong because the policy actively discouraged individual creativity.

41. (4) (Literal Comprehension) Letterman is described as relaxed. None of the other options apply.

42. (1) (Analysis) The frame is the actual TV set with the portrait being the picture. Options (2), (3), and(5) are more abstract than is intended. Option (4) is not relevant to TV.

43. (3) (Inferential Comprehension) Letterman's actions and attitudes reflect the opinion of many of today's viewers that very few current TV programs contain much of value. The other options may be true, but they do not explain the phrase.

44. (5) (Inferential Comprehension) This idea is suggested in the last paragraph in which the reviewer contradicts Options (1) and (4). Options (2) and (3) are wrong because the comments are favorable, not negative, and are rather overstated.

45. (5) (Analysis) An example, rather than a lengthy explanation, often helps to clarify a statement. These examples indicate the manner in which people are writing about Letterman. The quotations do not fuction in the ways suggested in the other options.

Recommended Readings for Popular Literature

The following list contains recommended books. These books are examples of excellent writing and of the type of material you will encounter in the GED Literature and the Arts Test.

Fiction

Erma Bombeck, *The Grass Is Always Greener Over the Septic Tank* (Greenwich, CT: Fawcett Crest, 1976).
Joseph Heller, *Something Happened* (New York: Ballantine Books, 1975).
Ken Kesey, *One Flew Over The Cuckoo's Nest* (New York: New American Library, 1962).
Colleen McCullough, *The Thorn Birds* (New York: Avon, 1978).
The Signet Classic Book of Contemporary American Short Stories, ed. Burton Raffel (New York: New American Library, 1986).

Nonfiction

Dee Brown, *Bury My Heart at Wounded Knee* (New York: Bantam Books, 1971, rpt. 1973).
James Herriot, *All Creatures Great and Small* (New York: Bantam Books, rpt. 1973).
Studs Terkel, *Working* (New York: Avon, 1975).
Jane van Lawick-Goodall, *In the Shadow of Man* (New York: Dell, 1972).
Writing Day by Day, ed. Robert Atwan and William Vesterman (New York: Harper and Row, 1987).

Poetry

Celebrations: A New Anthology of Black American Poetry, ed. Arnold Adoff (Chicago: Follett Publishing Co., 1977).
Cowboy Poetry From Utah, ed. Carol Edison (Salt Lake City: Utah Folklife Center, 1985).
Flowering After Frost: An Anthology of Contemporary New England Poetry, ed. Michael Mahon (Boston: Branden Press, 1975).
Natives: An Anthology of Contemporary American Poetry, ed. Ed Ochester (Madison, WI: RPM, 1973).
Poetry Loves Poetry: An Anthology of Los Angeles Poets, ed. Bill Mohr (Santa Monica, CA Momentum Press, 1985).
Western Wind: An Introduction to Poetry, ed. John Frederick Nims (New York: Random House, 1983).

Drama

Robert Bolt, *A Man for All Seasons* (New York: Random House, 1962).
David Mamet, *Goldberg Street: Short Plays and Monologues* (New York: Grove Press, 1985).
Sam Shepard, *Seven Plays* (New York: Bantam Books, 1981).
Neil Simon, *The Sunshine Boys* (New York: Random House, 1973).
Tom Stoppard, *Rosencrantz and Guildenstern Are Dead* (New York: Grove Press, 1985).
Wordplays 2: An Anthology of New American Drama (New York: Performing Arts Journal Publication, 1982.)

Recommended Readings for Classical Literature

The following list contains recommended books. These books are examples of excellent writing and of the type of material you will encounter in the GED Literature and the Arts Test.

Fiction

Stephen Crane, *The Red Badge of Courage and Other Writings* (Boston: Houghton Mifflin, 1960).
Charles Dickens, *Hard Times* (New York: W.W. Norton 1966).
Ernest Hemingway, *The Short Stories of Ernest Hemingway* (New York: Charles Scribner's Sons, 1938).
James Joyce, *A Portrait of the Artist As a Young Man* (New York: The Viking Press, 1916, rpt. 1967).
Jack London, *The Best Short Stories of Jack London* (Greenwich, CT: Fawcett Publications, 1962).
Richard Wright, *Native Son* (New York: The Modern Library, 1940).
Short Fiction, *A Critical Collection*, ed. James R. Frakes and Isadore Traschen (Englewood Cliffs, NJ: Prentice-Hall, 1959).

Nonfiction

Ruth Benedict, *Patterns of Culture* (New York: New American Library, 1946, rpt. 1959).
Joseph Campbell, *The Hero With a Thosuand Faces* (Princeton: Princeton University Press, 1949, rpt. 1968).
Ralph Waldo Emerson, *The Complete Essays and Other Writings of Ralph Waldo Emerson* (New York: The Modern Library, 1940).
Carl G. Jung, *Man and His Symbols* (New York: Dell Publishers, 1969).
Walter Pater, *The Renaissance* (New York: Folcroft, 1977).
Carl Sandburg, *Abraham Lincoln: The Prairie years* (New York: Harcourt Brace and Co., 1926).
Classics of Western Thought: The Modern World, ed. Charles Hirschfield (New York: Harcourt Brace and World, 1968).

Poetry

British and American Poets: Chaucer to the Present, ed. W. Jackson Bate and David Perkins (San Diego: Harcourt Brace and Jovanovich, 1986).
T.S. Eliot, *The Wasteland and Other Poems* (New York: Harcourt Brace and World, 1934).
Literature: An Introduction to Reading and Writing, ed. Edgar V. Roberts and Henry E. Jacobs (Englewood Cliffs, NJ: Prentice-Hall, 1986).

The Major Victorian Poets, ed. William H. Marshall (New York: Washington Square Press, 1967.)

The Poem: An Anthology, ed. Stanley Greenfield and A. Kinsley Weatherhead (New York: Appleton-Century-Crofts, 1968).

Drama

Anton Checkov, *Plays* (Baltimore, MD: Penquin Books, 1971).

Henrik Ibsen, *Four Great Plays* (New York: Bantam Books, 1962).

Luigi Pirendello, *Naked Masks* (new York: E.P. Dutton and Co., 1952).

American Drama, ed. Alan S. Downer (New York: Thomas Y. Crowell Co., 1960, rpt. 1967).

The Theatre of Bernard Shaw, ed. Alan S. Downer (New York: Dodd, Mead and Co., 1961).

Tennessee Williams, *Sweet Bird of Youth*, (New York: New American)

Recommended Readings for Commentary on the Arts

General

The Chicago Tribune
The Los Angeles Herald
Newsweek
The New York Times
Time
USA Today
Working Woman
the entertainment section of your local newspaper

Literature

The New Yorker
Northwest Review

TV and Film

TV Guide
Video Review

Visual Arts

American Artist
Art in America

Performing Arts

Down Beat
Rolling Stone

Answer Key

CHAPTER 1: WHAT IS THE MESSAGE?

Stated Main Idea

Rosa Parks Sparks Boycott

WHO: Rosa Parks
WHAT: sparked the Montgomery bus boycott
WHERE: Montgomery, Alabama
WHEN: December 1, 1955
HOW: by refusing to give up her seat

MAIN IDEA SENTENCE: On December 1, 1955, Rosa Parks sparked the Montgomery bus boycott in Montgomery, Alabama, by refusing to give up her seat.

Tired Hearts

1. e The facts in the passage state that, after a triathlon, the heart did not contract as well with each beat. However, 24 hours later, the heart worked normally. This points to the main idea that an overworked heart does not work at peak levels.
2. a The reliability of the sports researchers has nothing to do with the way the heart works. All of the other choices are related to the working of the heart.

Poor Girl

1. c The lines "You've got another love" and "If I try to tell her what I know/She'll misunderstand and make me go" suggest that the speaker wants to give advice to her former boyfriend's new girlfriend but is hesitant to do so.
2. b The words *poor girl* suggest pity. A person who is sympathetic to another, and who wants to advise her, would feel pity, not fear or innocence.

The Unstated Main Idea

Résumé

1. c The poem describes the effects of different ways of killing yourself. It ends with the statement: "You might as well live." This indicates that the poem is about suicide.
2. c The poet shows that each of the seven ways of committing suicide has negative effects. This suggests that living is a better choice and that suicide is more trouble than it's worth.
3. a The definition of résumé as a short account of a person's qualifications for seeking a job has nothing to do with the poem. The poem concerns going on with one's life. It also is a summary of ways to kill oneself.
4. a Suicide is a serious problem among youth in American society. By treating such a serious subject with humor, the writer is able to communicate effectively the message that life is worth living. The poet uses rhyme, but it is not the main reason for the poem's effectiveness.

Internal Revenue Service cartoon

1. c The taxpayer's reply to the robber upon leaving the IRS office means that the robber is too late because the IRS had earlier "robbed" the taxpayer.
2. a, d, f, g There are no facts to support the statements that the taxpayer has money in his briefcase, that he is being arrested, or that the gunman wants to kill the taxpayer.

Martha J. Barnes, Reading and Critical Thinking in the Content Areas (Chicago: Contemporary Books, Inc., 1988), pp. 110-120.

Alcohol Passage

1. d The entire passage discusses the effect of alcohol on different people. Choice *a* is advice that the article doesn't give, and choice *c* is off the topic. Although the passage explains why men can consume more alcohol than women, it is a detail and not the main idea.
2. a, c, e The passage does not support the statement that women do not get drunk as quickly as men. In fact, the opposite is stated.
3. c Of the choices listed, the facts in the passage can explain only why some men are able to take advantage of women who drink.
4. Five things from the passage that can determine how quickly a person may get drunk are:
   (1) how fast alcohol is absorbed into the bloodstream
   (2) how quickly it is eliminated from the body
   (3) the amount of water the drinker's body contains
   (4) the percentage of body fat a person has (or size)
   (5) whether the drinker is a male or a female

Inferences

"Experience" cartoon

1. b The cartoon shows two images: a person looking for a job and a candidate running for the office of president of the United States. The ordinary citizen is turned away because he lacks experience, but the politician does not need any. By putting the two ideas together, the cartoonist is suggesting that a double standard exists.
2. b Of the choices given, only Pat Robertson, a religious leader, had never held a political office when he ran for president.

Left and Right Brain Power

1. d The only choice that is suggested by the passage is that left-brain and right-brain people approach problems differently.
2. You could have chosen three of the following pieces of evidence to support your inference:
   - The left half controls the ability to see detailed patterns; the right half controls the ability to see the whole picture.
   - Left-brained people tend to be better at performing detail-oriented work; right-brained people tend to be better at performing tasks that require the ability to see the "big picture."
   - Visual responses are different for each half of the brain.
   - The left half of the brain focuses on special facial features; the right half usually sees the entire face.
3. trees, forest
   Trees refers to details; *forest* refers to the larger picture.
4. The expression is generally used as a put-down for detail-oriented people, or left-brain dominant people.

Monkey's Paw

1. c The monkey's paw brings sorrow and suffering to the three people who ask it to grant wishes. This fact suggests that the best title among the choices is: "Be Careful About What You Ask for—You Just Might Get It."
2. d Mrs. White is grief stricken upon her son's death and wishes him alive again. This is contrary to choice *d*, that she cares more about the insurance money than she does about her son.
3. no The story does not take place in the United States. The clue word that helps to determine this fact is *pounds*. A pound is a unit of money used in Great Britain.
4. Mr. White's second wish is for his son's return to life. The clue that helps determine this is that, after his son dies and Mr. White makes a second wish, he hears a loud knocking at the door.
5. Mr. White's third wish is for Herbert's spirit to rest in peace. The clue that helps determine the answer is that, after Mr. White makes the wish, the knocking stops.

Conclusions from Facts

Pie Graphs—Offenders and Victims

1. a. 18%
   b. 56% (38% + 18%)
   c. 18%
   d. 21% (17% + 4%)
2. a. no The graph does not concern the number of robberies reported.
   b. yes By adding the percentage of murders committed by acquaintances of the victims (38%) to the percentage of murders committed by relatives (18%), you arrive at a total of 56%. This means that most victims of homicides know the people who kill them.
   c. yes The percentages of people killed by strangers and relatives both are 18%.
   d. no The graph does not compare the number of robberies to the number of violent crimes committed.
   e. yes The graph shows that 75% of robberies are committed by strangers—the greatest percentage of all categories shown.
   f. yes The percentage of robberies committed by strangers (75%) is greater than the percentage of murders committed by strangers (18%).

Manchild in the Promised Land

1. According to the passage, the mother is willing to withstand the cold and to buy spoiled meat rather than complain. Both of these facts support the statement that she is willing to risk her health.
2. The son pawns his ring so that he and his mother can take a cab to the housing office. This indicates unselfishness.
3. The passage mentions cold weather and a snowstorm.
4. The references to 145th Street and Broadway, two streets mainly identified with New York City.

Zits Can Give Teens Fits

1. yes The passage describes the various stages of acne.
2. no The passage cautions people to avoid fatty and acidic foods but does not state that fats and acids are the chief causes of acne.
3. yes The first sentence of the passage states that acne is a common skin problem for teenagers.
4. no Dirty skin is not mentioned as a cause of acne.
5. yes Fatty acids contain oils, so they increase the amount of oil in the body.
6. yes The passage states that acne is especially common during the teen years because the production of sex hormones increases.

Predictions and Outcomes

One Flew over the Cuckoo's Nest

1. d The statements "We do not impose certain rules and restrictions on you without a great deal of thought" and "What can we do? You can't be arrested. You can't be put on bread and water. . . . What can we do?" both add up to the prediction that the men will have one of their favorite privileges taken away.
2. c The passage makes no mention of the men's lack of job skills in the outside world.

The Insurance Game

1. c The passage states, "The company is gambling that most young people will live through the year." A gamble is a bet based on evaluating certain odds. A dice game and a lottery operate differently than a bet.
2. c The amount of insurance premiums are determined by how long people in a given population are expected to live. If women's premiums are lower than men's, then you can conclude that women generally live longer than men. It is a faulty generalization that women are healthier than men.
3. b Of the three choices, only health has a direct relationship to the length of a person's life.

4. a. 71.9 years
   b. 77.3 years
   c. 4.3 years less
   d. 4.2 years longer
5. a. F At every age level of the chart, women's life expectancy is higher than men's.
   b. T Women who were 65 years old in 1980 were expected to live 17.3 more years; men of the same age were expected to live 14 more years.
   c. F At the ages of 10, 15, and 20, both males and females had many years left to live.
   d. F Men who were 30 years old in 1980 could be expected to live until the age of 73.2.

CHAPTER 2: WHAT PATTERN IS FOLLOWED?

Cause and Effect

Plaque Attack

1. The order may vary:
   a. eating on the run
   b. not flossing
   c. not brushing
2. Gingivitis is the first stage of gum disease that untreated plaque leads to.
3. Periodontitis is the advanced stage of gum disease that untreated plaque leads to.
4. Tooth loss is the final result of untreated gum disease.
5. Plaque-fighting toothpastes have resulted from dentists' warnings about the dangers of plaque.

Cop-outs for Dropouts

1. In some urban communities, almost half of the ninth graders drop out before they complete high school.
2. d lack of dedicated teachers
   e inadequate teaching of basic skills
3. a lack of support from parents
   c school administrators
4. a too little government funding
   c unprepared and undedicated teachers
5. b peer group pressure
   c lack of parental support
   d overcrowded classes

Against the Odds

1. Answers will vary. Possible causes of Terry's fall are a twisted ankle and overeagerness to win the game.
2. The effects of Terry's fall were (1) a fractured kneecap requiring extensive knee surgery and (2) postponement of a possible pro basketball career.
3. b According to the passage, an athlete who suffered an injury similar to Terry's was back on the court within a year.
4. a The statement "down, but not down for the count" suggests that Terry is not giving up on his career goal.
5. Answers will vary. "Against the Odds" is an appropriate title because it shows an athlete's determination to "beat the odds" and realize his dream.

Sequence

Senior Fights Back

1. a. 2
   b. 1
   c. 3
   d. 4
   e. 6
   f. 5
   g. 7
   h. 8
2. b The best statement of the message that underlies the passage is "Looks Are Deceiving" because one would not ordinarily expect a female senior citizen to be able to defend herself.
3. c Sally's ability to defend herself suggests that she had training in self-defense.
4. b The only reasonable prediction based on the events is that the boy will be booked for attempted armed robbery since the witnesses to the crime called the police.

Illustration—Human Reproduction

Human reproduction is a many-staged process. The father contributes the sperm. The mother contributes the ovum. The parents' sex cells unite into a fertilized ovum. The fertilized ovum divides into two cells. The two cells divide into four cells. From four cells, the fertilized ovum divides into eight. Within one month a human embryo is formed. After nine months, the baby is fully formed, a creature that is made up of millions of cells!

Drug Use and Abuse Are Not New

a. 1800s
b. 1980s
c. 1805
d. 1960s
e. 1893
f. 1832
g. 1900s
h. 2700 B.C.
i. 1500 B.C.
j. 1700s

2. a. T The passage discusses the medical uses of certain drugs.
   b. T The passage mentions the addictive powers of opium and cocaine.
   c. F The passage mentions marijuana's effectiveness in counteracting the nauseous side effects of chemotherapy.
   d. T All of the drugs described in the passage come from plants.
   e. T The passage mentions England's use of heroin as a painkiller and states that it is illegal in the United States.

Comparison and Contrast

Worlds Apart

1. a. Both are 25 years old.
   b. Both live in South Africa.
   c. Both work at the same mine.
2. Exact wording may vary. You could have listed five of these six differences:
   a. Simon can't vote in national elections; Pieter can.
   b. Simon is black; Pieter is white.
   c. Simon lives in poverty; Pieter does not.
   d. Simon is a laborer; Pieter is a foreman.
   e. Simon earns $200 a month; Pieter earns $200 a week.
   f. Simon is likely to be less educated than Pieter.
3. The answers below show from highest to lowest:

   Percent of population:
   blacks, whites, coloreds, Asians

   Literacy level:
   whites, Asians, coloreds, blacks

   Money spent on education:
   whites, Asians, coloreds, blacks
4. a. however
   b. although
   c. different
   d. contrasted to
   e. while

Smoking, Thumb Sucking, and . . . Lollipops

1. a. are bad habits
   b. have bad effects on the victim's health
   c. are described as being relaxing
   d. satisfy the need for oral stimulation
2. a. T
   b. S
   c. S
   d. S
   e. T
   f. T
   g. S
3. Effects of smoking cited in the passage are lung cancer, heart disease, and other respiratory diseases.
4. Effects of thumb sucking cited in the passage are crooked teeth and lisping.
5. You may have chosen five of these "contrast" words contained in the passage: but, though, while, nevertheless, differences, on the other hand, and however.
6. a. in common
   b. both
   c. similarity
7. a. to begin
   b. second
   c. third
   d. finally

Friends' Advice

1. out of sight, out of mind
2. no news is good news
3. you're never too old to learn
4. a bird in the hand is worth two in the bush
5. he who hesitates is lost
6. still waters run deep
7. d In the story, for every positive statement given, a negative one applies. This suggests that, for most platitudes, it's easy to find an opposite.
8. a. what you don't know can't hurt you
      no news is good news
   b. you can't judge a book by its cover
      still waters run deep
9. Based on the advice given, it would seem that Jan is the true friend because the advice she gives Connie is more encouraging than June's.

CHAPTER 3: WHAT WORDS ARE USED?

Denotation and Connotation

A Writer Needs an Ear for Words

1. a. ate
   b. devoured
   c. glowing
   d. glittered
   e. obesity
   f. plump
   g. unutterable
   h. unspeakable
2. b The entire point of the essay concerns the proper use of words. Choices *a* and *c* are details that support the main idea. Choice *d* is not stated.

What's in a Name?

1. a. hair designer or hairstylist
   b. maintenance engineer
   c. sanitation engineer
   d. funeral director or mortician
   e. domestic engineer
2. c The passage raises the question of whether or not changes in job titles reflect status consciousness more than the desire for more accurate descriptions. This would seem to imply that, for status conscious people, changes in job titles are more important than for people who are secure in themselves. Choice *a* is stated directly in the passage, and choices *b* and *c* are neither stated nor implied.

SKILL REVIEW

The War Prayer

1. c By pointing out the negative consequences of war, Twain is suggesting that war is a mixed blessing. The other titles do not fit the poem.
2. a. 3
   b. 2
   c. 1
   d. 5
   e. 4
   f. 7
   g. 6
3. Exact wording may vary.
   The young men in uniform are held in high esteem because they are going off to war to defend their county.
4. The mood of the church before the stranger's speech is jubilant, joyful. The mood during the speech is hushed.
5. Exact wording may vary.
   Few individuals spoke openly against the war because they were afraid of being viewed as being unpatriotic.
6. In his prayer, the pastor is asking for victory over and protection from the enemy in war. Twain's message is that the request does not seem to befit the role of a pastor because engaging in war goes against the principles of most religions.
7. a The stranger pointed out to the congregation the consequences of victory in war. By showing the ill effects of war, he is implying that a just God does not approve of war under any circumstances.
8. You can probably conclude that Twain withheld the poem from publication because of the controversy it would raise by being antiwar in a prowar period.
9. From the man's act of questioning the messenger's sanity, you can infer that people who do not conform to the larger society's ways of thinking are considered to be abnormal.
10. Answers will vary, but it is true that speaking out against war is not as unpopular in recent years as it was in Mark Twain's time.

CHAPTER 4: HOW SOUND IS THE REASONING?

Invalid Conclusions

A Heart Gives Out

1. d The passage cites several health problems that Mayor Washington had that put him in the high risk category. However, the conclusion of the passage suggests that his death was related directly to the political fighting in City Hall. This represents an invalid conclusion based on faulty reasoning.

2. a. I The passage discusses the risk factors involved in heart attacks. Just because a person has high blood pressure, high cholesterol levels, and does not get regular checkups doesn't mean he or she will have a heart attack.

   b. V The passage points out that high blood pressure alone doubles the risk of heart attacks, and that blacks develop high blood pressure twice as often as whites and they die from it three times as often.

   c. V If obesity, high cholesterol levels, and smoking increase one's risk of suffering a heart attack, then reducing these risk factors would reduce a person's risk.

   d. I The passage points out that the mayor's poor physical health was the key factor that contributed to his death, not his love for the city.

   e. I People *can* reduce their risk of suffering heart attacks.

3. b The passage says, "Mayor Washington was such a case, despite the state-of-the-art medical care used to revive him." In the way it is used, state-of-the-art means modern.

Twelve Angry Men

1. a While it may be true that some teenagers from disadvantaged areas are physically abused daily, it is not valid that *all* of them suffer the same fate.

2. d There are exceptions to the rule that teenagers from disadvantaged areas are physically abused daily.

3. Juror Eight appears to show the most concern by his statement that "It's not easy for me to raise my hand and send a boy off to die without talking about it first."

4. Juror Ten appears to show the least concern by his statement that "We don't owe him a thing. He got a fair trial."

Bar Graph—"Married Women Double in the Work Force"

1. V The percentage of married women who had jobs in 1957 was 33%; the percentage in 1987 was 68%.

2. I The graph does not explain why more married women are working today.

3. V The percentage of single women in the work force for 1957 and 1987 is 80%.

4. I The graph does not deal with reasons why more divorced women are working today.

5. V The percentage of married women working in 1987 was 68%; the percentage of divorced and widowed women who were working was 79%, a difference of 11%.

6. V The graph shows that the majority of married women are working today (68%) as opposed to only 33% thirty years ago. Assuming that the husbands of these women also have jobs, this fact supports the conclusion that the United States has become primarily a two-income-family nation within the past 30 years.

Values

The Gentleman of Rio en Medio

1. c Don Anselmo had agreed to sell his land to the Americans for less than it was worth, but was not willing to sell the trees that stood for his family members. These facts support the statement that Don Anselmo was a man of his word who valued family more than money.

2. Answers will vary. Two sentences that show Don Anselmo to be a mannerly and dignified man are: "The old man bowed to all of us," and, "Then he shook hands all around."

3. The Americans demonstrate their respect for the generosity of Don Anselmo by buying the trees from his descendants.

4. The Americans could have put up a *No Trespassing* sign on the property and had the trespassers arrested for overrunning the property.

5. a In the United States, the seller of property seeks the highest price a buyer will pay for property.

6. c The story is titled "Gentleman of Rio en Medio" because the main character acts like a gentleman throughout. He shows the qualities of politeness and loyalty, and he is considerate and respected.

7. b Of the three groups shown, only Native Americans do not perceive land in terms of its dollar value.

Is the "Right to Die" a Wrong Idea?

1. b The Dutch culture is different than the culture of the United States. The fact that the Dutch are not kept on life-support systems as often as in the United States indicates a value being decided by the needs of the culture.
2. a In the passage, the critics question giving doctors the right to "play God." This argument is based on standards of right and wrong as determined by religion.

Pie Graph—Should Mercy Killing Be Legal?

1. b Whether the lawyers represent a geographic cross-section of the United States has much to do with the reliability of the information in the graph.
2. a If the percentage of those responding "Don't Know" is added to the percentage responding "Should Not" (11.5 and 31.7 percent) the total would be 43.2 percent. This figure is smaller than the one for those who favor mercy killing (56.8 percent).
3. c Of all the specialties in law listed, the real estate lawyer's opinion would carry the least weight. A specialist in that field would deal less frequently with related issues than would criminal and civil lawyers. Criminal lawyers deal with cases that include physical injury and death. Civil lawyers consider issues that have to do with lawsuits that sometimes involve bodily injury.

Fact, Opinion, and Hypothesis

Curious Tourist, Yankee Gringo

1. a Of the choices, only a—that if their parents had jobs, many Mexican children would not have to beg American tourists for money—is a hypothesis. You could check this hypothesis by seeing if most of the parents of begging children had jobs.

2. a. O Whether Mexican or Puerto Rican food is tastier is based on a person's feelings.

   b. F The passage states that Julia and Miguel are celebrating their first wedding anniversary.

   c. F The passage states that Sarah and Sid sit across from Julia and Miguel, who have seats in the tourist section.

   d. O Cuteness is a matter of personal opinion.

   e. F Data can prove whether inflation has lowered the value of the peso.

It Is 3:30. Do You Know Where Your Child Is?

1. F This is stated in the article.
2. O It cannot be proved whether the Swedish government or the U.S. government cares more for its children. The level of caring cannot be measured.
3. H The statement could be proved by measuring attendance at PTA meetings after the establishment of child-care centers in schools.
4. O That American taxpayers should support adequate child care is an opinion.
5. O Whether Ziegler's idea about solving the child-care crisis costs too much money depends on one's personal feeling about how much money is "too much."

Pretty Poison

1. a. O Whether all homes should have plants is a matter of personal taste. The word *should* indicates an opinion.

   b. F The passage identifies Goldfrank as a medical expert at New York University Medical Center. This could be verified through the medical center's personnel department.

   c. H The results of talking to plants every day can be tested.

   d. H The statement that poisoning incidents in the home would drop if parents stopped buying toxic plants can be tested.

e. H The possible relationship between the number of poisonous houseplants sold and the number of poison victims admitted to emergency rooms can be tested.

2. b The best reason given as to why poinsettias would be defended against claims that they are poisonous is that people might not buy them, and as a result, sales would suffer. People who buy poinsettias are not as likely to start a campaign in favor of the plants as people who sell them. The statement that Christmas is not Christmas without poinsettias is a personal opinion.

Author's Bias

A Review of *Everything Goes* by Holly Hansen

1. The critic thinks *Everything Goes* is a poor novel.
2. Answers will vary. Some words that show the critic's bias against the book are: ". . . an effort to satisfy the tasteless appetite of today's mass paperback reader"; "it was impossible for this reader to focus on the main character"; "the main character is described using all of the standard worn-out phrases"; and "we should weep for the hundreds of trees that went into the publication of this book. We should pray that she never gets near a word processor again."
3. Answers will vary. However, generally critics are well-read people and are knowledgeable about the kinds of books they review.
4. The purpose of the advertisement is to get the public to buy the book in spite of its flaws.
5. Answers will vary. A promoter would be doing his job by publicizing the book in the way described. The words are actually included in the critic's review, but they are taken out of context and distort the critic's intent in favor of the writer.
6. The promotional piece distorts the true meaning of the critic's review by taking out words that are necessary to communicate the reviewer's true feelings.

Stereotypes

After You, My Dear Alphonse

9

1. a The title "After You, My Dear Alphonse" shows the courtesy and respect the boys have for each other.
2. e The line "*Dead Japanese . . .*" serves to place the story in time. During World War II, the United States was at war with Japan. Also, the line indicates that the boys are playing war. Throughout the story the boys are never shown as having prejudiced feelings (choice a).
3. b The image of Boyd carrying kindling wood suggests the idea of slavery.
4. Answers may vary. Some statements that indicate Mrs. Wilson's attitude toward blacks are: "Boyd will eat *anything*"; "Boyd wants to grow up and be a big strong man so he can work hard"; "And he certainly has to be strong to do that—all that lifting and carrying at a factory"; and "I guess all of you want to make just as much of yourselves as you can."
5. Mrs. Wilson offers Boyd the clothes because she assumes that Boyd's family is poor.
6. Johnny behaves differently from his mother in that he accepts Boyd for who he is. Unlike Mrs. Wilson, Johnny has no preset ideas about what Boyd or his family should be like.
7. The statements indicating that the boys do not understand Mrs. Wilson's behavior are: " 'She's screwy sometimes.' 'So's mine,' Boyd said."

CHAPTER 5: WHAT LOGIC IS FOLLOWED?

Analogy

Impeaching a President

1. b The passage shows the similarity between impeaching a president and performing surgery on a sick patient.
2. Impeachment and surgery are alike in that:
   a. Both are actions that should not be done hastily or emotionally.

b. Both are procedures whose purpose is to remove a source of serious trouble and reestablish a healthy condition.

c. Both situations require consultation, and a decision may take several months.

d. Both involve periods of stress for everybody concerned.

e. Neither should be undertaken unless there is no alternative.

3. b A surgeon performs the operation on a sick patient; the Senate makes the final decision on impeachment.
4. b Both the House of Representatives and a physician make a preliminary decision, not the final judgment.
5. The comparison made between impeaching a president and performing major surgery is sound because the two procedures, though different, are related to each other in a similar way.
6. The ideas being compared are running a city and paying one's gas bill. The analogy is unsound because running a city requires skills that greatly differ from those needed to manage one's personal finances.
7. The ideas being compared are the American family and the U.S. government. The analogy is unsound because a family's economic needs and resources are different from those of a government involving hundreds of millions of people.

Persuasive Techniques

Letter to the Editor 1

1. The persuasive technique used is *name-calling,* the tactic of attaching an unfavorable name to an idea. The writer describes the high-rise projects as snake pits.
2. The technique used is *testimonial,* the strategy of identifying a well-known person with a cause. The writer states that the well-loved and respected mayor believed that managing public housing is impossible.
3. The technique used is *bandwagoning,* the tactic of persuading someone to do something just because someone else does it. The writer tries to persuade the city's housing committee to dynamite the projects because St. Louis did it.
4. The technique used is *glittering generalities,* using general and vague terms to influence a person to act. The writer does not say just how getting rid of the buildings will "do wonders" or how it will give the residents a "new lease on life."
5. The technique used is *innuendo.* The paragraph hints that Commissioner Greene may have something to hide, since he is the only member who is against tearing down the projects.

Letter to the Editor 2

1. The technique used is *innuendo.* The writer is hinting that the newspaper to which she is writing is in favor of dynamiting the projects.
2. The technique used is *name-calling.* The writer describes Joe Blow as "weak-thinking" and accuses him of living in an "ivory tower."
3. The technique used is *testimonial.* The writer mentions a famous former resident who opposes tearing down the high-rise projects.
4. The technique used in the paragraph is *bandwagoning.* The writer suggests that others join in the movement toward resident involvement in decison making.
5. The technique used is *glittering generalities.* The writer does not state what "unlimited opportunities" for change and improvement will follow from residents having a voice in decision making.

SKILL REVIEW

Teachers: An Endangered Species

1. b The passage says that when males dominated the teaching profession, teachers were given more respect. The decline in respect for teachers could have other causes than the increase in women teachers. Other changes may also have taken place.

   c The editorial implies that the increase of female teachers in the schools brought about a breakdown in discipline. This conclusion is invalid because there could be many other causes for the breakdown in discipline in the schools.

d The editorial does not provide evidence to support the statement that fields dominated by men receive more respect than those dominated by women. The passage does not say how much respect people in other fields get.

f The statement that male teachers take their jobs more seriously than female teachers do cannot be supported because seriousness and dedication are not restricted to one sex. Female teachers take their jobs just as seriously as male teachers.

2. Three statements that show bias against women include "Men took their jobs seriously and devoted the time necessary to do a good job in the classroom," implying that women do not; "Today, however, with mostly women in the classroom, teachers are viewed as little more than high-priced baby-sitters;' and "It stands to reason that the fields dominated by men receive more respect than those dominated by women."

3. a. F By citing salary figures, the editorial shows that the average beginning salary of a teacher is low compared to the starting salaries of an engineer.

   b. O The belief that teachers should be paid as much as other professionals who have an equal amount of education is an opinion. The word *should* indicates an opinion.

   c. O It is an opinion that teachers have an easy career. Whether a career is easy depends on a person's standards for judging.

   d. H Research could test whether greater pay and respect would lead to an increase in the number of good teachers drawn to the field.

   e. H Research could test the relationship between an increase in pay and the number of men (with families) returning to the teaching field. Research could also test whether most men who have given up teaching have families to support.

4. a By comparing average salaries for beginners in three fields and showing that teachers earn the least money, the writer implies that teaching is undervalued.

5. Answers will vary. One statement that supports the belief that U.S. teachers have low status is the saying "Those who *can*, do; those who *can't*, teach," which implies that teachers have little ability. Another statement is that teachers are often described as incompetent and lazy. Also, by contrasting the status of teachers in Europe with the status of teachers in the United States, the writer supports the belief that American teachers have relatively low status.

6. A stereotype about teachers mentioned in the essay is that teachers are incompetent and lazy.

7. b The analogy is unsound because students' performance *is* related to their teacher's expectations as demonstrated by the editorial's example. Students who have been expected to receive poor grades are given them. The same students who have been expected to perform well do so. On the other hand, teachers' performance is *not* related to their low status in the eyes of the public. To argue that because teachers have low status they perform poorly is unsound reasoning.

8. Answers will vary. Students can choose one of these three ways in which teachers and endangered species are alike:

   (1) The numbers for both are shrinking.
   (2) Teachers and endangered species are valuable resources.
   (3) Both require special action to increase their numbers.

9. Two forms of persuasion shown in the editorial are name-calling and bandwagoning.

10. Examples of name-calling include *high-priced baby-sitters* and the description of teachers as incompetent and lazy. Examples of bandwagoning include the statements *Other countries pay more than lip service to education. Why can't we?* and *You can get behind the movement for educational reform that is sweeping the country.*

MATH

To The Student:

This math packet includes the following sections:

1. Key words and phrases for arithmetic operations
2. Multiplication tables
3. Guide/outline of specific math areas with books and page numbers listed
4. Order of operations
5. Steps for solving word problems
6. Fractions
7. Decimals
8. Percents
9. Review of word problems

As we were reviewing all the math material available and trying to decide what specific areas of math to include in this packet, our main goal was to provide substance and extra help without overwhelming you. That became a difficult task! Math covers many extensive areas and trying to limit the material without missing important information was an enormous undertaking. The material we finally chose focuses on many of the basics. In deciding to proceed in that direction, we concluded that many of the "higher" areas of math (algebra, geometry) rely on a solid understanding of the basics, especially fractions. So, there is lots of information and lots of practice exercises in fractions as well as decimals, percents, and word problems.

In addressing the areas of ratio and proportion, algebra, and geometry, we felt that the reading and exercises in the math textbook along with the corresponding exercise book provided the best direction we could offer. The material is clearly explained, and you should have little difficulty following the intent of the material. When you are dealing with the algebra and geometry, remember: take things slowly, follow the sequence, and review often.

KEY WORDS AND PHRASES FOR ARITHMETIC OPERATIONS

Addition

Sum
Total
Plus
Increase
More Than
Greater Than
Exceed
And
Make Larger
Raise
Add
Both
Combined
In All
Altogether
Additional

Subtraction

Difference
Fewer
Less Than
Reduce
Decrease
Diminish
Minus
Take Away
Lower
Lost
Left
Remain
Fell
Dropped
Change
Nearer
Farther

Multiplication

Product
Of
At
Times
Multiplied
Total
Per
As Much
Twice
By

Division

Quotient
Ratio
Go Into
Contained
Average
Out of
Equally
Cut
Split
Divided
Each

NAME: ______________________________

TABLE AID

ZERO	ONE	TWO	THREE
0X0=0	1X0=0	2X0=0	3X0=0
0X1=0	1X1=1	2X1=2	3X1=3
0X2=0	1X2=2	2X2=4	3X2=6
0X3=0	1X3=3	2X3=6	3X3=9
0X4=0	1X4=4	2X4=8	3X4=12
0X5=0	1X5=5	2X5=10	3X5=15
0X6=0	1X6=6	2X6=12	3X6=18
0X7=0	1X7=7	2X7=14	3X7=21
0X8=0	1X8=8	2X8=16	3X8=24
0X9=0	1X9=9	2X9=18	3X9=27
0X10=0	1X10=10	2X10=20	3X10=30
0X11=0	1X11=11	2X11=22	3X11=33
0X12=0	1X12=12	2X12=24	3X12=36

FOUR	FIVE	SIX	SEVEN
4X0=0	5X0=0	6X0=0	7X0=0
4X1=4	5X1=5	6X1=6	7X1=7
4X2=8	5X2=10	6X2=12	7X2=14
4X3=12	5X3=15	6X3=18	7X3=21
4X4=16	5X4=20	6X4=24	7X4=28
4X5=20	5X5=25	6X5=30	7X5=35
4X6=24	5X6=30	6X6=36	7X6=42
4X7=28	5X7=35	6X7=42	7X7=49
4X8=32	5X8=40	6X8=48	7X8=56
4X9=36	5X9=45	6X9=54	7X9=63
4X10=40	5X10=50	6X10=60	7X10=70
4X11=44	5X11=55	6X11=66	7X11=77
4X12=48	5X12=60	6X12=72	7X12=84

EIGHT

8X0=0
8X1=8
8X2=16
8X3=24
8X4=32
8X5=40
8X6=48
8X7=56
8X8=64
8X9=72
8X10=80
8X11=88
8X12=96

NINE

9X0=0
9X1=9
9X2=18
9X3=27
9X4=36
9X5=45
9X6=54
9X7=63
9X8=72
9X9=81
9X10=90
9X11=99
9X12=108

TEN

10X0=0
10X1=10
10X2=20
10X3=30
10X4=40
10X5=50
10X6=60
10X7=70
10X8=80
10X9=90
10X10=100
10X11=110
10X12=120

ELEVEN

11X0=0
11X1=11
11X2=22
11X3=33
11X4=44
11X5=55
11X6=66
11X7=77
11X8=88
11X9=99
11X10=110
11X11=121
11X12=132

TWELVE

12X0=0
12X1=12
12X2=24
12X3=36
12X4=48
12X5=60
12X6=72
12X7=84
12X8=96
12X9=108
12X10=120
12X11=132
12X12=144

KEEP THIS TABLE. WHENEVER YOU FORGET YOUR TABLES WHEN YOU ARE DOING YOUR DRILL SHEETS, LOOK BACK TO THE TABLE AID TO SEE WHAT THE ANSWER IS.

MATH

1. Order of Operation - Choosing the correct expression - Contemporary's Pre-GED Book 2 (Blue book) pages 22-25

   Mean, Median and Item Sets - Contemporary's G.E.D. Text (Thick green book) pages 34 -46

   "Problem Solving with Whole Numbers" - G.E.D. Ex. book (thin, green) pages 8-17

2. Fractions - Blue book pages 66-103
   "Fractions" - Thin green book - pages 24-29

3. Decimals - Blue book - pages 30-63
   Fraction/Decimals - Blue book - pages 104-111
   "Decimals" - thin green book - pages 18-23

4. Probability, Ratio, and Proportion - thick green book - pages 115-127

   Probability, Ratio, and Proportion - thin green book - pages 30-34

5. Percents - Blue book - pages 114-140 and thick green book pages 128-157 especially

   (similar material just a little different approach)

6. Measurement - Contemporary's Pre-G.E.D. Book 1 - (yellow) pages 140-153

   "Measurement" - thin green book - pages 40-45

7. Graphs and Tables - thick green book - pages 180-201
   thin green book - pages 46-55

8. Algebra - thick green book - pages 202-223

   "Algebra" - thin green book - pages 56-61

9. Geometry - thick green book - pages 224-275

   "Geometry" - thin green book - pages 62-71

10. Special Topics - thick green book - pages 276-308

Identifying the Operation

Being able to identify what operation is needed to solve math problems is essential to the problem-solving process.

▶ In the situations described below, fill in the operation that would be necessary to find a solution.

+	−	×	÷
add	subtract	multiply	divide

1. You ______________ to figure how many calories you ate altogether one day.

2. You ______________ the total of the bills you have to pay from your weekly paycheck amount to figure if you can afford dinner and a show this week.

3. You ______________ to find the total cost of several cans of the same paint for a redecorating project.

4. You ______________ to figure the cost for one can of pop when you have bought a whole case of it.

5. You ______________ to find out how much you will earn cleaning houses when you charge one flat rate for a cleaning.

6. You ______________ to find how many boxes of Girl Scout cookies you bought if you can remember the total money you owe and the cost for each box.

7. You ______________ the total number of men from the total number of women in the United States to find out how many more women than men there are.

8. You ______________ the amount of each check you write from the previous balance to find the new balance.

Karen Scott Digilio, Critical Thinking with Math: Reasoning and Problem Solving (Chicago: Contemporary Books, Inc., 1989), pp. 44-47.

Rounding Numbers to Choose Operations

Some word problems seem difficult because the numbers in them are so large that they seem threatening. In such problems, you may be able to see the patterns within them, if you don't get confused by the big numbers. Sometimes you can ***round*** the numbers to make the problem easier to understand. Then you can decide which operation to use. When you round, you will have to decide whether you want to round to the nearest ten, hundred, or thousand. Remember, if you round one number in a problem, you must round them all.

Look at the example below.

> A pilot flew 1,537 miles during one stint of 3 hours and 15 minutes. At what speed (mph) was he flying?

Now reread the problem with the simpler numbers 1,500 and 3. You can see that this is clearly a division problem.

1,500 miles ÷ 3 hours = 500 mph
so
1,537 miles ÷ 3 hours 15 minutes = 473 mph

▶ In the following problems, simplify the numbers by rounding them to make the patterns of the problems easier to see. Then solve using the rounded numbers. Check your work by solving the original problems on another sheet of paper.

1. A dictionary sells for $65. Approximately how many of these dictionaries can an adult education program buy with a grant for $9,570?

2. Steve Farmer owns 1,526 cows. This is 498 fewer than Joe Rancher owns. Approximately how many cows does Joe own?

3. A certain town has 2,786 households. If each household has an average of 22 small appliances, approximately how many small appliances are there altogether in the households of this town?

4. A school purchased 1,652 yards of lumber for projects in its woodworking classes. If the students used 1,397 yards of it, approximately how much lumber was left at the end of the year?

5. A dense object falls from a plane at the rate of 76 yards per second. In 53 seconds, approximately how far will it fall?

Comparing Problems to Choose Operations

It is helpful to be able to see similarities between word problems. If you can recognize that a problem is similar to one you have worked before, then you will find it easier to set up and solve.

See if you can recognize which two problems out of three have the same pattern. Be careful! Similar information given in two problems does not necessarily mean the same operation will be used to solve them. Look at the example below.

a. Elwood drives back to his home town every weekend. If the round trip is 350 miles, how many miles will he have traveled in 4 weekends?

OPERATION: ______________

b. Jonathan and his girlfriend go to different schools. Their schools are 980 miles apart. If Jonathan has traveled 1,960 miles round trip in the last year to visit his girlfriend, how many times has he visited her?

OPERATION: ______________

c. Tory goes to the store and back every day. If he goes 5 miles each day, how far does he go in 30 days?

OPERATION: ______________

Choices *a* and *c* are similar because they follow the pattern of **multiplying to find a total amount**. Choice *b* is a division problem.

▶ Read each problem, and write the operation you would use to solve it. Then complete the sentence that explains the similarity between two of the problems.

1. **a.** A consumer's magazine rated 12 cars in one issue. All but 2 were foreign cars. How many domestic cars did the magazine rate?

   OPERATION: ______________

   b. There are 23 sports teams at one college. Three of the teams are for females, the rest are all male. How many teams at the college are for men?

   OPERATION: ______________

   c. At a small bank, there are 15 clerks who have high school diplomas, 7 who have completed some college, and 6 who have college degrees. How many clerks at the bank have at least a high school education?

   OPERATION: ______________

Choices _____ and _____ are similar because they follow the pattern of

____.

2. a. Franklin makes $12 per hour. How much would his gross pay be after 23 hours of work?

   OPERATION: _______________

   b. Eggs are sold at a farmer's stand for 5 cents each. How much do a dozen eggs cost at the stand?

   OPERATION: _______________

   c. A package of gum costs 30 cents. If there are 6 sticks in a package, how much does each stick cost?

   OPERATION: _______________

   Choices _____ and _____ are similar because they follow the pattern of

   ____.

3. a. If a box of chocolates weighs 16 ounces, and each piece of candy weighs 2 ounces, how many pieces are in the box?

   OPERATION: _______________

   b. If three friends equally share a box of hard candies, and each one eats 5 ounces, how many ounces of candy were in the box?

   OPERATION: _______________

   c. If a box of gumdrops contains 330 calories, and each gumdrop contains 6 calories, how many gumdrops are in the box?

   OPERATION: _______________

   Choices _____ and _____ are similar because they follow the pattern of

   ____.

Problem-Solving Strategy: Choose an Operation

Sometimes a problem does not tell you whether to add or subtract, multiply or divide. To solve such a problem, you must read the problem carefully. Then, decide what the problem is asking you to do. Next, choose an operation and solve the problem. Watch for clue words such as: **in all, total, how many . . . ?**, or **how many more . . . ?**

STEPS

1. **Read the problem.**
   The three heaviest players on a football team weigh 290 pounds, 278 pounds, and 304 pounds. What is the total weight of these three players?

2. **Decide what the problem is asking.**
   In this problem, the question "What is the **total** . . . ?" is asking you to find a sum.

3. **Choose the operation.**
   To solve, you must add.

4. **Solve the problem.**
   290 + 278 + 304 = 872
   The **total** weight of the three players is 872 pounds.

Choose the correct operation and solve each problem.

1. The distance from Chicago, Illinois to Butte, Montana is 1,522 miles. Seattle, Washington is 567 miles beyond Butte. **How far** is it from Chicago to Seattle?

   Operation ____________________

   Answer ____________________

2. Jerome counted 845 old books and 519 new books for the book sale. **How many more** old books were at the sale than new books?

   Operation ____________________

   Answer ____________________

3. Fletcher cashed a check for $292. He deposited $105 of that money in his account. **How much** of the $292 did Fletcher keep?

   Operation ____________________

   Answer ____________________

4. Sue scored a 78, an 81, a 76, and a 79 in the golf tournament. What was her **total** score?

   Operation ____________________

   Answer ____________________

James T. Shea, Basic Essentials of Mathematics: Book One (Texas: Steck-Vaughn Co., 1991), pp. 18-19.

Applying Your Skills

Choose an operation and solve.
Watch for clue words.

Do Your Work Here

1. Marie budgeted the following for her monthly bills: $450 for rent and $100 for electricity. **How much** did she budget altogether for these bills? ______

2. On one Saturday, 73,927 people attended a basketball game. The next week 68,412 people saw the game. **How many** people saw the two games? ______

3. The area of North Carolina is 48,843 square miles. South Carolina's area is 30,207 square miles. Which is larger? ______ **How much larger?** ______

4. The Cascade Tunnel in Washington is 41,152 feet long. The Moffat Tunnel in Colorado is 32,798 feet long. **How much longer** is the Cascade Tunnel than the Moffat Tunnel? ______

5. In one year 28,762 new books were published. The next year 30,387 books were published. **How many** books were published during the two years? ______

6. Apollo 8 flew 550,000 miles on its trip around the moon. Apollo 9 flew 3,700,000 miles on its trip. **How many** miles were flown by the two spacecraft? ______

7. The population of Arkansas is 2,296,419. ______ Arizona has 2,718,425 people. Which has more people? **How many more?** ______

8. Juan and Ho combined their baseball card collection. Juan has 1,094 cards. Together they have 2,106 cards. **How many** cards does Ho have? ______

9. The attendance at Marshall High School's football game one week was 5,479. The next week 4,388 students attended the game. Altogether, **how many** people attended these two games? ______

10. Mount Whitney is 14,494 feet high. Borah Peak is 12,662 feet high. **How much higher** is Mount Whitney? ______

The Five-Step Model

Some people can look at a problem and tell right away what they need to do to solve it. Many other people need a plan to get started. In the previous lessons, you practiced the skills needed to restate problems and to work in a step-by-step manner. You are now ready to put together the five basic steps that you should follow to solve any math word problem. The rest of the exercises in this chapter will help you develop your skills for all five steps.

▶ Fill in the blanks below. Use the words in the box.

logical information question answer operation

1. First, you need to know what it is you are being asked to find. In other words, you must identify the ______________________.

2. Next, you need to figure out which numbers in the problem should be used to solve it and which, if any, are extra information. In other words, you must identify the ______________________.

3. Then, you must decide if you need to add, subtract, multiply, divide, or some combination. In other words, you must identify the correct _____________.

4. At this point, you must do the necessary arithmetic. In other words, you must find the ______________________.

5. Finally, you must reread the question and make sure you have answered it logically. In other words, you must check to see that your answer is ______________________.

Let's see how we put these all together to solve a word problem.

> An ad for a clerical job says it requires a typing speed of 60 words per minute. Van takes a 5-minute test for the job and types 320 words. What is his typing speed?
>
> STEP 1. Question: **What is his typing speed?**
> STEP 2. Information: **320 words 5 minutes**
> STEP 3. Operation: + − × ÷
> **to find words per minute you should divide (÷)**
> STEP 4. Computation:
> **320 words ÷ 5 minutes = 64 words per minute**
> STEP 5. Check for Logic: **It is logical that if he types 320 words in 5 minutes, he will type fewer words in 1 minute.**

Karen Scott Digilio, Critical Thinking With Math: Reasoning and Problem Solving (Chicago: Contemporary Books, Inc., 1989), pp. 30-31, 38-43, 50-51.

▶ Let's try using those steps to solve these problems.

6. The Williamses have a freezer with an inside height of 36 inches. How many frozen dinners can they stack in it if each dinner lies flat 2 inches high?

STEP 1. Question: ______________________ **Compute**
STEP 2. Information: ______________________
STEP 3. Operation: ______________________
STEP 4. Computation: ______________________
STEP 5. Check for Logic: ______________________

▶ Be careful with these problems. They take more than one computation to solve.

7. A game show contestant is told he will win $1 for the first 10 seconds he can keep a feather in the air and that the winnings will double every 10 seconds. How much will he win if he keeps the feather in the air for 50 seconds?

STEP 1. Question: ______________________ **Compute**
STEP 2. Information: ______________________
STEP 3. Operation: ______________________
STEP 4. Computation: ______________________
STEP 5. Check for Logic: ______________________

8. When Rick Mears won $804,853 in the Indianapolis 500 in 1988, he received the largest prize in auto racing history up to that point. The second-place winner got $335,103, and third place won $228,403. How much of the $5,020,000 total prize money was left for the rest of the top 33 racers?

STEP 1. Question: ______________________ **Compute**
STEP 2. Information: ______________________
STEP 3. Operation: ______________________
STEP 4. Computation: ______________________
STEP 5. Check for Logic: ______________________

Sorting Out Information in Word Problems

Why do word problems have ***unnecessary information***? Actually problems with extra information resemble real life. Often we have more information than we need to solve a problem, and we have to choose only the necessary information.

One thing that makes word problems hard to solve is that they may contain more information than you need. Look at the example below:

> Patsy bought two 32-ounce jars of mayonnaise on sale last week. She saved 40 cents on each jar. How much did she save on the mayonnaise altogether?

STEP 1. What is the question?
How much did she save?

STEP 2. What do I need in order to find that? (*Write the numbers and the labels.*)
two jars
40 cents saved on each

STEP 3. What is *not* needed to solve the problem?
32-ounce jars

Why?
The size of the jars is not needed to solve the problem.

▶ Included in the following problems is unnecessary information. Circle the letter identifying information that you *don't* need in order to answer the question. *Do not solve the problems yet.*

1. A chair is on sale at Frank's Furniture Mart. It originally sold for $560 and is now being advertised for $390. Frank's employees can get an additional $80 discount. How much would one of Frank's employees pay for the chair on sale?

It is *not* necessary to know:

a. $560 original price
b. $390 sale price
c. $80 discount

2. The Sampsons have the Cleveland *Plain Dealer* delivered to their home every day but Sunday for 30 cents per day. Every Sunday they buy the New York *Times* for $1.00. During one 30-day, 4-weekend month, how much did they spend on the *Plain Dealer*?

It is *not* necessary to know:

a. 30-cents-per-day cost for the *Plain Dealer*
b. $1.00-per-Sunday cost for the *Times*
c. 30-day, 4-weekend month

3. An earthquake took the lives of 464 people in one village. 54 people were hospitalized, and 28 were treated and released. 109 people were uninjured but lost their homes. How many people were injured or killed in the disaster?

It is *not* necessary to know:

a. 109 lost their homes
b. 28 were treated
c. 464 were killed
d. 54 were hospitalized

4. The local night school offered 21 GED classes in 5 different locations last semester. If each class had an average enrollment of 12 women and 9 men, how many GED students did the school enroll last semester?

It is *not* necessary to know:

a. 21 classes
b. 12 women
c. 9 men
d. 5 locations

▶ Now solve the problems above, using only the necessary information.

5. $$\begin{array}{r} \$390.00 \\ -\ 80.00 \\ \hline \end{array}$$

7. $$\begin{array}{r} 464 \\ 54 \\ +\,28 \\ \hline \end{array}$$

6. $$\begin{array}{r} 26 \\ \times\ .30 \\ \hline \end{array}$$

8. $$\begin{array}{r} 12 \\ +\ \ 9 \\ \hline \end{array} \qquad \begin{array}{r} 21 \\ \times\,21 \\ \hline \end{array}$$

Recognizing Incomplete Information

Believe it or not, some word problems do not have enough information to solve them. Is this just a mistake? No. In some cases, you are being tested to see whether you understand what is needed to solve a problem. Look at the following example.

> Handy Man's is selling stockade-style fencing in 6-foot sections. How many sections do the Jamisons need to purchase to enclose their yard?

Is enough information given to solve the problem? **no**
If not, what is missing? **the size of the Jamisons' yard**

▶ In the following problems, identify whether enough information is given to enable you to reach a solution. If more information is needed, tell what that is.

1. Jane's boss told her to file 200 documents. She can file 50 documents per hour. How many hours will it take her to finish the task?

   Is enough information given to solve the problem? ______

   If not, what is missing? ________________________________

   ____

2. Thomas's old clunker uses 15 gallons of gas a week. Thomas drives to and from work 5 days a week. What mileage (miles per gallon) is Thomas getting with his car?

   Is enough information given to solve the problem? ______

   If not, what is missing? ________________________________

   ____

3. Christy bought a new washing machine. She put $50 down and agreed to pay $30 a month on an installment plan. How much did she pay for the washing machine?

   Is enough information given to solve the problem? ______

   If not, what is missing? ________________________________

   ____

4. Bart found 68 empty pop cans in his apartment the morning after one of his parties. There were 16 unopened cans still in his refrigerator. How much pop had he figured he needed per guest?

Is enough information given to solve the problem? ________

If not, what is missing? ____

____

5. Main Street Office Supplies ordered 17 cases of manila envelopes from its supplier. Each case contains 12 boxes of envelopes. How many boxes of envelopes were ordered?

Is enough information given to solve the problem? ________

If not, what is missing? ____

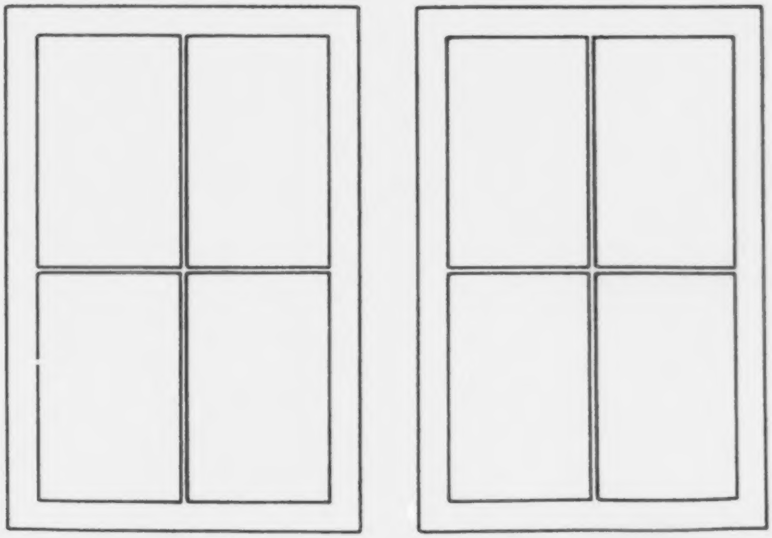
____

6. Look at the windows below. The windows are 6 feet high and 4 feet wide. How much will curtains cost to cover the windows?

Is enough information given to solve the problem? ________

If not, what is missing? ____

____



Recognizing Incomplete Information in Problems

On tests you may be given a choice of answers, and you will have to choose the correct one. Occasionally, you will not be able to solve the problem because not enough information is given. In these cases, you may have to:

1. Choose the answer *not enough information is given*.

OR

2. Tell what information is needed to solve the problem.

Look at the example below:

> There are 279 people working in a 9-year-old office building. On the average, how many people work on each floor?
>
> **a.** 31 people per floor
> **b.** 2,511 people in the building
> **c.** We need to know how many floors.
> **d.** We need to know how many offices per floor.

STEP 1. Question: **How many people work on each floor? (average)**
STEP 2. Information: **279 people**
STEP 3. Compute: **279 people ÷ number of floors = average**

The correct answer is **c. need to know the number of floors**. Since there is not enough information here, you can't solve the problem.

WARNING: Don't just divide 279 people by the number 9 from the 9-year-old building. Choice *a—31 people*—may seem right because 279 ÷ 9 = 31, but don't fall into the trap. The age of the building is not important in this problem.

▶ Now complete the problems by either finding the correct solution—from *a* or *b*—or indicating what information is needed—from *c* or *d*.

1. What would be the cost for a family to buy the following school supplies: 2 pairs of scissors at $3 each, 4 tablets of paper at $2 each, and 6 pens at $1 each?

   a. $6 for the supplies
   b. $20 for the supplies
   c. We need to know how many school children are in the family.
   d. We need to know what supplies the school provides.

2. A truck driver covers 495 miles one day, 605 miles the next day, and the rest of the trip to Dubuque on the third day. How far did the trucker have to travel to get to Dubuque?

   a. 1,100 miles
   b. 110 miles
   c. We need to know how far he went on the third day.
   d. We need to know where the trucker started his trip.

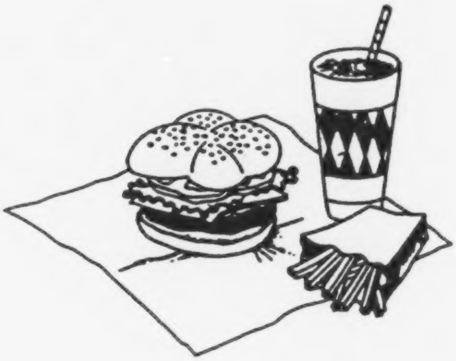
3. Mr. Scott and Mr. Spingola set up a community hall for a speaker's night. They put 15 rows of 30 chairs on one side of an aisle and the same arrangement on the other side of the aisle. How many people could this hall then seat?

   a. 450 people altogether
   b. 900 people altogether
   c. We need to know how many speakers there would be.
   d. We need to know how many people had tickets for the event.

4. Michael cut two pieces of lumber 4 feet long each, three pieces 3 feet long each, and two pieces each 1 foot in length. How much more did he need to cut to make a desk?

   a. 19 feet altogether
   b. 8 feet more
   c. We need to know how much lumber was wasted in the first cuts.
   d. We need to know how much lumber he needs to build the desk.

5. Look at Delma's idea of a healthy lunch. This is what she ate every day while she did temporary work in a downtown office. The hamburger had 220 calories, the fries had 180 calories, and the cola had 120 calories. How many calories did she consume at lunchtime while working at that office?



   a. 520 calories
   b. 1,560 calories
   c. We need to know how much she threw away.
   d. We need to know how many days she ate that lunch.

Deciding Whether the Answer Makes Sense

After finding the answer to a problem, you should take the time to check to make sure your solution answers the question and makes sense. Often you can catch a careless mistake and correct your work. Look at the example below. Read the problem and write *L* next to the answers that seem logical.

Minnie averages $57 a night in tips at her waitressing job. How much has she earned in tips after 36 nights at her job?

_____ **a.** $100

_____ **b.** $240

_____ **c.** $2,100 (*by rounding $57 to $60 and 36 nights to 35 nights*)

_____ **d.** $2,400 (*by rounding $57 to $60 and 36 nights to 40 nights*)

You should have written *L* next to choices c and d. The other two choices are *not* logical since Minnie can earn $114 in two nights and nearly $240 in four nights.

HINT: Estimating answers can help you to see if your answer makes sense, but only by calculating carefully can you be sure that your answer is correct.

▶ In the following problems, identify each of the answer choices that seems close to the actual answer by putting an *L* (for logical) on the line next to it. In some cases below, a problem may have more than one logical answer. Use your skill with estimating to help you.

1. If the population of the United States was 3,929,214 in 1790 and gained 1,379,269 people within 10 years, what was the nation's population in 1800?

a. _____ 3,500,000

b. _____ 4,000,000

c. _____ 5,000,000

d. _____ 5,500,000

2. Duwayne is a long distance truck driver. He covered 68,109 miles last year. If he drove 219 days that year, how many miles did he drive on the average per day?

a. _____ 310 miles

b. _____ 340 miles

c. _____ 3,000 miles

d. _____ 3,500 miles

3. The Morellis think that they can sell their present home for $81,950. They have their eyes on a new home that would cost them $120,575. How much is the price difference between the homes?

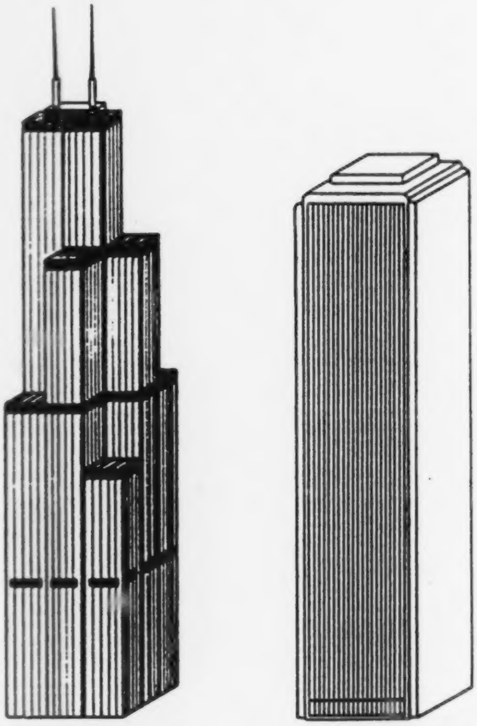
a. ______ $4,000
c. ______ $140,000
b. ______ $40,000
d. ______ $200,000

4. Twenty-eight churches in one county agree that each will house up to 118 homeless on each night that the temperature dips below 20 degrees during the winter months. What is the maximum number of homeless that will be taken in on any cold winter night in these churches?

a. ______ 36,000
c. ______ 3,000
b. ______ 3,600
d. ______ 360

5. Compare the heights of the two buildings at the right. Approximately how much taller is the Sears Tower than the Standard Oil Building?

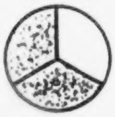
a. 40 feet
b. 400 feet
c. 2,500 feet
d. 2,600 feet



Unit 2 Fractions

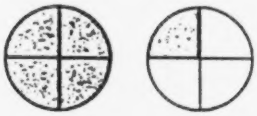
The Meaning of Fractions

A **fraction** is a part of something. A foot is a fraction of a yard. Specifically, a foot is $\frac{1}{3}$ of a yard. (There are three feet in a whole yard.) We use fractions to tell how much a part is of a whole. Fractions have two parts: a **denominator** and a **numerator.** The bottom number is the denominator. It tells how many parts it takes to make the whole. The top number is the numerator. It tells how many equal parts you have.



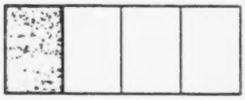
numerator → $\frac{2}{3}$ ← two parts shaded ← three parts in the whole

denominator



$\frac{5}{4}$ ← five parts shaded ← four parts in each whole

Use the drawing at the right to answer these questions.



1. Into how many equal pieces has the rectangle been divided? 4

. How many parts have been shaded? ____

3. Write the fraction which tells what part is shaded. ____

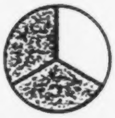
4. Write the fraction which tells which part is not shaded. ____

5. The rectangle has been divided into fourths. How many fourths equal a whole? ____

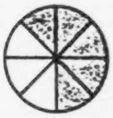
6. How many fourths equal one-half? ____

Write the fraction which tells what part is shaded.

7.



$\frac{2}{3}$



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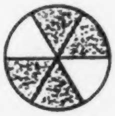

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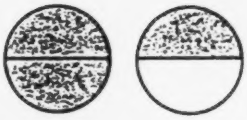
8.



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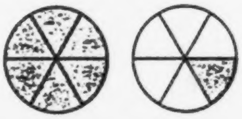

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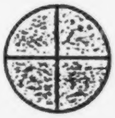

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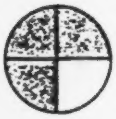
9.



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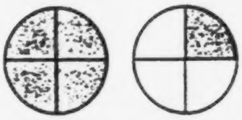

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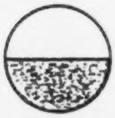

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James T. Shea, Basic Essentials of Mathematics: Book One (Texas: Steck-Vaughn Co., 1991), pp. 40-41, 43, 47-48, 50, 107-108, 57, 60-61, 66, 109, 67, 73, 110, 75.

Classifying Fractions—Proper, Improper, and Mixed Numbers

There are three forms of fractions—**proper, improper,** and **mixed numbers.** A proper fraction is one in which the numerator is smaller than the denominator. The value of a proper fraction is always less than one. An improper fraction is one in which the numerator is equal to or larger than the denominator. The value of an improper fraction is either equal to one or more than one. A mixed number has a whole number part and a fractional part. The value of a mixed number is always more than one.

EXAMPLES

Proper Fraction

$\frac{4}{5} \rightarrow \frac{\text{smaller}}{\text{larger}}$

Improper Fractions

$\frac{5}{4} \rightarrow \frac{\text{larger}}{\text{smaller}}$

$\frac{6}{6} \rightarrow$ equal

Mixed Number

$3\frac{2}{5} \rightarrow$ whole number + fraction

Describe the following fractions by writing proper, improper, or mixed number.

1. $\frac{12}{11}$ ____________ $\frac{7}{12}$ ____________ $\frac{4}{4}$ ____________
2. $5\frac{3}{7}$ ____________ $\frac{2}{3}$ ____________ $\frac{115}{127}$ ____________
3. $\frac{3}{5}$ ____________ $\frac{5}{3}$ ____________ $2\frac{3}{4}$ ____________
4. $\frac{10}{10}$ ____________ $\frac{9}{20}$ ____________ $\frac{1}{2}$ ____________
5. $6\frac{1}{4}$ ____________ $\frac{7}{5}$ ____________ $\frac{4}{3}$ ____________

Circle the proper fractions. Put an *x* on the improper fractions. Do not do anything to mixed numbers.

6. $3\frac{1}{8}$ $\frac{6}{9}$ $\frac{12}{6}$ $1\frac{1}{2}$ $\frac{5}{8}$ $20\frac{1}{2}$ $\frac{13}{4}$ $\frac{8}{8}$
7. $\frac{4}{3}$ $1\frac{3}{4}$ $\frac{1}{8}$ $\frac{9}{7}$ $3\frac{6}{7}$ $\frac{5}{5}$ $10\frac{9}{13}$ $7\frac{4}{5}$
8. $\frac{6}{8}$ $\frac{18}{15}$ $\frac{6}{5}$ $3\frac{1}{2}$ $\frac{9}{12}$ $\frac{1}{8}$ $\frac{20}{21}$ $\frac{1}{9}$
9. $6\frac{1}{3}$ $\frac{3}{7}$ $\frac{15}{2}$ $\frac{6}{2}$ $9\frac{3}{8}$ $1\frac{1}{11}$ $\frac{16}{15}$ $\frac{1}{13}$
10. $\frac{9}{9}$ $2\frac{1}{4}$ $\frac{4}{4}$ $\frac{5}{6}$ $\frac{10}{6}$ $\frac{12}{7}$ $5\frac{7}{8}$ $\frac{3}{12}$

Changing and Reducing Proper and Improper Fractions

Any fraction may be changed to an equivalent fraction by multiplying or dividing both its numerator and denominator by the **same** number. In addition and subtraction it is often necessary to raise fractions to higher terms by multiplying the numerator and denominator by the same number. Fractions may also be reduced or simplified by dividing the numerator and denominator by the same number. A fraction is reduced to its **lowest terms** when there is no number other than 1 which will divide evenly into both the numerator and denominator. The answers to all addition, subtraction, multiplication, and division problems **must** be reduced to lowest terms (simplified) or your answers will be incorrect.

To change an improper fraction to simplest form, divide the denominator into the numerator for a whole-number quotient. The remainder after dividing becomes the numerator of the fraction. The divisor becomes the denominator of the fraction.

Raise $\frac{1}{2}$ to fourths.

Multiply both numerator and denominator by 2.

$$\frac{1 \times 2}{2 \times 2} = \frac{2}{4}$$

Reduce $\frac{10}{15}$ to lowest terms.

Divide both numerator and denominator by 5.

$$\frac{10 \div 5}{15 \div 5} = \frac{2}{3}$$

Simplify $\frac{14}{4}$

First divide 4 into 14.

$$\begin{array}{r} 3 \\ 4\overline{)14} \\ 12 \\ \hline 2 \end{array} \rightarrow 3\frac{2}{4} = 3\frac{1}{2}$$

Write the remainder as a fraction.

Raise each fraction to higher terms as indicated.

1. $\frac{2}{3} = \frac{6}{9}$ $\frac{1}{2} = \frac{\_\_}{12}$ $\frac{1}{4} = \frac{\_\_}{12}$ $\frac{1}{4} = \frac{\_\_}{8}$ $\frac{5}{6} = \frac{\_\_}{12}$

2. $\frac{1}{2} = \frac{\_\_}{32}$ $\frac{5}{8} = \frac{\_\_}{32}$ $\frac{3}{4} = \frac{\_\_}{32}$ $\frac{3}{4} = \frac{\_\_}{16}$ $\frac{5}{8} = \frac{\_\_}{16}$

Reduce each fraction to lowest terms.

3. $\frac{8}{12} = \frac{2}{3}$ $\frac{8}{16} =$ $\frac{6}{8} =$ $\frac{3}{9} =$ $\frac{9}{12} =$

4. $\frac{4}{8} =$ $\frac{8}{12} =$ $\frac{15}{30} =$ $\frac{20}{25} =$ $\frac{4}{8} =$

Simplify the following improper fractions. Be sure to write answers in lowest terms.

5. $\frac{7}{2} = 3\frac{1}{2}$ $\frac{6}{5} =$ $\frac{13}{4} =$ $\frac{18}{4} =$ $\frac{21}{7} =$

6. $\frac{52}{3} =$ $\frac{20}{5} =$ $\frac{39}{6} =$ $\frac{100}{3} =$ $\frac{9}{8} =$

Using the LCD

To add or subtract fractions, you might need to find the *lowest* common denominator (LCD) of the fractions. The lowest common denominator is the smallest number that both denominators will divide into evenly. Then you can use the LCD to write equivalent fractions.

Use the LCD to write equivalent fractions for $\frac{2}{3}$ and $\frac{1}{4}$.

List several multiples of each denominator.

Multiples of 3:
3 6 9 12 15

Multiples of 4:
4 8 12 16 20

The LCD is the smallest number that appears on both lists.

The LCD of $\frac{2}{3}$ and $\frac{1}{4}$ is 12.

The LCD is the smallest number that both 3 and 4 will divide into evenly.

Write equivalent fractions.

$$\frac{2}{3} = \frac{2 \times 4}{3 \times 4} = \frac{8}{12}$$

$$\frac{1}{4} = \frac{1 \times 3}{4 \times 3} = \frac{3}{12}$$

Find: $\frac{2}{3} + \frac{1}{5}$

Write equivalent fractions with like denominators. Use the LCD.

$$\begin{array}{r} \frac{2}{3} = \frac{2 \times 5}{3 \times 5} = \frac{10}{15} \\ + \frac{1}{5} = \frac{1 \times 3}{5 \times 3} = \frac{3}{15} \\ \hline \end{array}$$

Add the numerators. Use the same denominator.

$$\begin{array}{r} \frac{2}{3} = \frac{10}{15} \\ + \frac{1}{5} = \frac{3}{15} \\ \hline \frac{13}{15} \end{array}$$

Use the LCD to write equivalent fractions for each pair of fractions below.

1. $\frac{3}{4} = \frac{3 \times 3}{4 \times 3} = \frac{9}{12}$ $\frac{1}{6} = \frac{1 \times 2}{6 \times 2} = \frac{2}{12}$

$\frac{1}{3} =$ $\frac{4}{5} =$

$\frac{2}{5} =$ $\frac{1}{4} =$

$\frac{5}{6} =$ $\frac{7}{8} =$

$\frac{3}{4} =$ $\frac{1}{3} =$

Add. Simplify.

2. $\begin{array}{r} \frac{1}{2} = \frac{9}{18} \\ + \frac{7}{9} = \frac{14}{18} \\ \hline \frac{23}{18} = 1\frac{5}{18} \end{array}$ $\begin{array}{r} \frac{4}{5} \\ + \frac{2}{3} \\ \hline \end{array}$ $\begin{array}{r} \frac{1}{3} \\ + \frac{3}{10} \\ \hline \end{array}$ $\begin{array}{r} \frac{3}{7} \\ + \frac{1}{2} \\ \hline \end{array}$ $\begin{array}{r} \frac{2}{3} \\ + \frac{4}{9} \\ \hline \end{array}$

3. $\begin{array}{r} \frac{2}{3} \\ + \frac{3}{4} \\ \hline \end{array}$ $\begin{array}{r} \frac{5}{6} \\ + \frac{3}{5} \\ \hline \end{array}$ $\begin{array}{r} \frac{3}{7} \\ + \frac{1}{4} \\ \hline \end{array}$ $\begin{array}{r} \frac{1}{2} \\ + \frac{2}{8} \\ \hline \end{array}$ $\begin{array}{r} \frac{3}{5} \\ + \frac{1}{4} \\ \hline \end{array}$

Adding Fractions and Reducing

Check for unlike denominators. Add the fractions and simplify the answers.

1.	$\frac{2}{4}$ $+\frac{3}{4}$ $\frac{5}{4} = 1\frac{1}{4}$	$\frac{2}{8}$ $+\frac{3}{8}$	$\frac{1}{3}$ $+\frac{2}{3}$	$\frac{3}{2}$ $+\frac{1}{2}$	$\frac{7}{5}$ $+\frac{2}{5}$	$\frac{4}{6}$ $+\frac{5}{6}$
2.	$\frac{7}{6}$ $+\frac{7}{6}$ $\frac{14}{6} = 2\frac{2}{6} = 2\frac{1}{3}$	$\frac{9}{10}$ $+\frac{9}{10}$	$\frac{7}{8}$ $+\frac{5}{8}$	$\frac{5}{4}$ $+\frac{5}{4}$	$\frac{12}{16}$ $+\frac{17}{16}$	$\frac{11}{12}$ $+\frac{9}{12}$
3.	$\frac{4}{5} = \frac{8}{10}$ $\frac{8}{10} = \frac{8}{10}$ $+\frac{6}{10} = \frac{6}{10}$ $\frac{22}{10} = 2\frac{2}{10} = 2\frac{1}{5}$	$\frac{2}{8}$ $\frac{5}{8}$ $+\frac{7}{8}$	$\frac{4}{5}$ $\frac{10}{15}$ $+\frac{9}{15}$	$\frac{10}{20}$ $\frac{8}{20}$ $+\frac{12}{20}$	$\frac{10}{16}$ $\frac{18}{32}$ $+\frac{12}{32}$	$\frac{2}{9}$ $\frac{4}{9}$ $+\frac{5}{9}$
4.	$\frac{6}{4}$ $\frac{7}{4}$ $+\frac{3}{4}$ $\frac{16}{4} = 4$	$\frac{8}{16}$ $\frac{15}{16}$ $+\frac{9}{16}$	$\frac{9}{5}$ $\frac{2}{5}$ $+\frac{4}{5}$	$\frac{6}{8}$ $\frac{7}{8}$ $+\frac{3}{8}$	$\frac{4}{2}$ $\frac{3}{2}$ $+\frac{1}{2}$	$\frac{1}{3}$ $\frac{6}{3}$ $+\frac{2}{3}$
5.	$\frac{3}{4} = \frac{9}{12}$ $\frac{2}{3} = \frac{8}{12}$ $+\frac{1}{2} = \frac{6}{12}$ $\frac{23}{12} = 1\frac{11}{12}$	$\frac{4}{6}$ $\frac{9}{6}$ $+\frac{5}{6}$	$\frac{7}{8}$ $\frac{1}{4}$ $+\frac{1}{2}$	$\frac{15}{20}$ $\frac{16}{20}$ $+\frac{9}{20}$	$\frac{1}{3}$ $\frac{5}{6}$ $+\frac{1}{4}$	$\frac{4}{5}$ $\frac{9}{5}$ $+\frac{7}{5}$
6.	$\frac{8}{12}$ $\frac{8}{12}$ $+\frac{9}{12}$	$\frac{4}{5}$ $\frac{12}{10}$ $+\frac{9}{10}$	$\frac{2}{4}$ $\frac{11}{6}$ $+\frac{5}{6}$	$\frac{3}{15}$ $\frac{16}{5}$ $+\frac{4}{5}$	$\frac{3}{8}$ $\frac{15}{8}$ $+\frac{7}{8}$	$\frac{7}{4}$ $\frac{11}{4}$ $+\frac{3}{4}$
7.	$\frac{4}{5}$ $\frac{3}{5}$ $\frac{2}{5}$ $+\frac{3}{5}$	$\frac{5}{7}$ $\frac{4}{7}$ $\frac{6}{7}$ $+\frac{3}{7}$	$\frac{9}{10}$ $\frac{7}{10}$ $\frac{3}{5}$ $+\frac{1}{2}$	$\frac{9}{12}$ $\frac{7}{12}$ $\frac{5}{12}$ $+\frac{3}{12}$	$\frac{1}{2}$ $\frac{1}{4}$ $\frac{2}{8}$ $+\frac{5}{8}$	$\frac{17}{20}$ $\frac{9}{20}$ $\frac{19}{20}$ $+\frac{3}{20}$

Checking Up

Raise to higher terms.

1. $\frac{1}{3} = \frac{\quad}{12}$ $\qquad \frac{1}{2} = \frac{\quad}{8}$ $\qquad \frac{1}{4} = \frac{\quad}{16}$ $\qquad \frac{1}{4} = \frac{\quad}{12}$ $\qquad \frac{1}{3} = \frac{\quad}{9}$ $\qquad \frac{1}{2} = \frac{\quad}{16}$

2. $\frac{2}{5} = \frac{\quad}{10}$ $\qquad \frac{3}{4} = \frac{\quad}{16}$ $\qquad \frac{4}{5} = \frac{\quad}{15}$ $\qquad \frac{5}{6} = \frac{\quad}{12}$ $\qquad \frac{5}{8} = \frac{\quad}{16}$ $\qquad \frac{2}{3} = \frac{\quad}{12}$

Reduce these fractions to lowest terms.

3. $\frac{9}{12} =$ _____ $\qquad \frac{8}{12} =$ _____ $\qquad \frac{9}{15} =$ _____ $\qquad \frac{6}{12} =$ _____ $\qquad \frac{6}{10} =$ _____ $\qquad \frac{6}{9} =$ _____

4. $\frac{15}{25} =$ _____ $\qquad \frac{6}{8} =$ _____ $\qquad \frac{12}{16} =$ _____ $\qquad \frac{4}{16} =$ _____ $\qquad \frac{2}{8} =$ _____ $\qquad \frac{5}{15} =$ _____

Simplify these fractions.

5. $\frac{18}{15} =$ _____ $\qquad \frac{14}{6} =$ _____ $\qquad \frac{10}{4} =$ _____ $\qquad \frac{9}{6} =$ _____ $\qquad \frac{12}{8} =$ _____ $\qquad \frac{13}{5} =$ _____

6. $\frac{15}{5} =$ _____ $\qquad \frac{8}{2} =$ _____ $\qquad \frac{9}{3} =$ _____ $\qquad \frac{15}{8} =$ _____ $\qquad \frac{7}{2} =$ _____ $\qquad \frac{9}{4} =$ _____

Add.

7. $\begin{array}{r} \frac{1}{3} \\ + \frac{2}{3} \\ \hline \end{array} \qquad \begin{array}{r} \frac{2}{5} \\ + \frac{3}{5} \\ \hline \end{array} \qquad \begin{array}{r} \frac{5}{16} \\ + \frac{7}{16} \\ \hline \end{array} \qquad \begin{array}{r} \frac{5}{8} \\ + \frac{1}{8} \\ \hline \end{array} \qquad \begin{array}{r} \frac{3}{4} \\ + \frac{1}{4} \\ \hline \end{array}$

8. $\begin{array}{r} \frac{2}{3} \\ + \frac{4}{5} \\ \hline \end{array} \qquad \begin{array}{r} \frac{2}{3} \\ + \frac{1}{2} \\ \hline \end{array} \qquad \begin{array}{r} \frac{3}{8} \\ + \frac{1}{2} \\ \hline \end{array} \qquad \begin{array}{r} \frac{5}{9} \\ + \frac{1}{3} \\ \hline \end{array} \qquad \begin{array}{r} \frac{1}{3} \\ + \frac{3}{4} \\ \hline \end{array}$

9. $\begin{array}{r} \frac{1}{4} \\ \frac{1}{4} \\ + \frac{3}{4} \\ \hline \end{array} \qquad \begin{array}{r} \frac{2}{3} \\ \frac{1}{3} \\ + \frac{2}{5} \\ \hline \end{array} \qquad \begin{array}{r} \frac{1}{2} \\ \frac{1}{6} \\ + \frac{5}{6} \\ \hline \end{array} \qquad \begin{array}{r} \frac{6}{8} \\ \frac{7}{8} \\ + \frac{1}{4} \\ \hline \end{array} \qquad \begin{array}{r} \frac{1}{2} \\ \frac{3}{5} \\ + \frac{4}{5} \\ \hline \end{array}$

10. $\begin{array}{r} 7\frac{1}{6} \\ + 3\frac{4}{5} \\ \hline \end{array} \qquad \begin{array}{r} 16\frac{3}{4} \\ + 15\frac{2}{3} \\ \hline \end{array} \qquad \begin{array}{r} 14\frac{7}{8} \\ + \quad 6\frac{1}{2} \\ \hline \end{array} \qquad \begin{array}{r} 6\frac{1}{2} \\ + 7\frac{1}{3} \\ \hline \end{array} \qquad \begin{array}{r} 19\frac{3}{10} \\ + \quad 1\frac{4}{5} \\ \hline \end{array}$

Solve.

Do Your Work Here

11. One end of a wrench is marked $\frac{3}{16}$ in. The other end is marked $\frac{1}{4}$ in. Which measure is larger? _______

Making Sure of Fractions—Addition

Change each fraction as indicated.

1. $\frac{1}{3} = \frac{}{12}$ $\frac{1}{2} = \frac{}{8}$ $\frac{1}{4} = \frac{}{16}$ $\frac{1}{4} = \frac{}{12}$ $\frac{1}{3} = \frac{}{9}$ $\frac{1}{2} = \frac{}{16}$

2. $\frac{2}{5} = \frac{}{10}$ $\frac{3}{4} = \frac{}{16}$ $\frac{4}{5} = \frac{}{15}$ $\frac{5}{6} = \frac{}{12}$ $\frac{5}{8} = \frac{}{16}$ $\frac{2}{3} = \frac{}{12}$

Reduce to lowest terms.

3. $\frac{9}{12} =$ $\frac{8}{12} =$ $\frac{9}{15} =$ $\frac{6}{12} =$ $\frac{6}{10} =$ $\frac{6}{9} =$

4. $\frac{15}{25} =$ $\frac{6}{8} =$ $\frac{12}{16} =$ $\frac{4}{16} =$ $\frac{2}{8} =$ $\frac{5}{15} =$

Reduce to whole numbers or mixed numbers.

5. $\frac{18}{15} =$ $\frac{14}{6} =$ $\frac{10}{4} =$ $\frac{9}{6} =$ $\frac{12}{8} =$ $\frac{13}{5} =$

6. $\frac{15}{8} =$ $\frac{7}{2} =$ $\frac{9}{4} =$ $\frac{15}{5} =$ $\frac{8}{2} =$ $\frac{9}{3} =$

Add. Reduce to lowest terms.

7. $\begin{array}{r} \frac{1}{3} \\ + \frac{2}{3} \\ \hline \end{array}$ $\begin{array}{r} \frac{3}{5} \\ + \frac{2}{5} \\ \hline \end{array}$ $\begin{array}{r} \frac{5}{8} \\ + \frac{5}{8} \\ \hline \end{array}$ $\begin{array}{r} \frac{3}{8} \\ + \frac{5}{8} \\ \hline \end{array}$ $\begin{array}{r} \frac{1}{8} \\ + \frac{7}{8} \\ \hline \end{array}$ $\begin{array}{r} \frac{1}{4} \\ + \frac{3}{4} \\ \hline \end{array}$

8. $\begin{array}{r} \frac{3}{9} \\ + \frac{1}{2} \\ \hline \end{array}$ $\begin{array}{r} \frac{1}{2} \\ + \frac{3}{8} \\ \hline \end{array}$ $\begin{array}{r} \frac{4}{7} \\ + \frac{1}{3} \\ \hline \end{array}$ $\begin{array}{r} \frac{1}{4} \\ + \frac{1}{2} \\ \hline \end{array}$ $\begin{array}{r} \frac{1}{5} \\ + \frac{3}{10} \\ \hline \end{array}$

9. $\begin{array}{r} 9\frac{3}{4} \\ + \frac{3}{6} \\ \hline \end{array}$ $\begin{array}{r} 7\frac{5}{8} \\ + 6\frac{5}{6} \\ \hline \end{array}$ $\begin{array}{r} 15\frac{7}{8} \\ + 9\frac{3}{4} \\ \hline \end{array}$ $\begin{array}{r} \frac{1}{4} \\ + 8\frac{3}{4} \\ \hline \end{array}$

10. $\begin{array}{r} 507 \\ + 19\frac{1}{2} \\ \hline \end{array}$ $\begin{array}{r} 109 \\ + 24\frac{7}{10} \\ \hline \end{array}$ $\begin{array}{r} 214 \\ + 15\frac{5}{6} \\ \hline \end{array}$ $\begin{array}{r} 125 \\ + 17\frac{3}{8} \\ \hline \end{array}$

Solve.

11. Ralph used $4\frac{1}{2}$ yards of solid blue fabric to make a banner. He used $2\frac{3}{4}$ yards of yellow fabric to trim the banner. How much fabric in all did he use on the banner?

Answer ____________________

12. In one day, Janet spent $2\frac{7}{8}$ hours varnishing an antique table. The next day she spent $3\frac{1}{2}$ hours varnishing a chair. How much time in all did she spend varnishing furniture?

Answer ____________________

Making Sure of Fractions—Subtraction

Change each mixed or whole number as indicated.

1. $12\frac{7}{10} = 11\frac{}{10}$ $\quad$ $8 = 7\frac{}{8}$ $\quad$ $4\frac{2}{5} = 3\frac{}{5}$ $\quad$ $9 = 8\frac{}{3}$ $\quad$ $7\frac{1}{4} = 6\frac{}{4}$

Subtract. Reduce to lowest terms.

2.

$$\begin{array}{rrrrrr} \frac{9}{10} & \frac{2}{3} & \frac{9}{16} & \frac{7}{8} & \frac{4}{5} & \frac{3}{4} \\ -\frac{4}{10} & -\frac{1}{3} & -\frac{5}{16} & -\frac{3}{8} & -\frac{2}{5} & -\frac{1}{4} \\ \hline \end{array}$$

3.

$$\begin{array}{rrrr} \frac{7}{8} & \frac{1}{2} & \frac{3}{5} & \frac{7}{10} \\ -\frac{1}{3} & -\frac{1}{4} & -\frac{1}{4} & -\frac{3}{5} \\ \hline \end{array}$$

4.

$$\begin{array}{rrrr} 63\frac{3}{4} & 22\frac{1}{2} & 27\frac{5}{6} & 18\frac{3}{4} \\ -\quad\frac{1}{6} & -\quad\frac{1}{5} & -\quad\frac{1}{2} & -\quad\frac{1}{4} \\ \hline \end{array}$$

5.

$$\begin{array}{rrrr} 9\frac{3}{4} & 65\frac{7}{9} & 204\frac{5}{8} & 108\frac{7}{12} \\ -2\frac{3}{10} & -17\frac{3}{6} & -\quad 35\frac{1}{6} & -\quad 29\frac{1}{4} \\ \hline \end{array}$$

6.

$$\begin{array}{rrrr} 26 & 14 & 23 & 6 \\ -\quad 7\frac{2}{3} & -\quad 9\frac{1}{4} & -14\frac{1}{8} & -2\frac{1}{8} \\ \hline \end{array}$$

7.

$$\begin{array}{rrrr} 21\frac{1}{3} & 16\frac{2}{7} & 32\frac{1}{3} & 45\frac{1}{9} \\ -12\frac{1}{2} & -\quad 7\frac{1}{3} & -14\frac{3}{4} & -24\frac{1}{2} \\ \hline \end{array}$$

Solve. **Do Your Work Here**

8. Betty ran 4 miles and Mark ran $2\frac{3}{4}$ miles. How much farther did Betty run? ________

9. Ho had $5\frac{1}{2}$ empty pages in his photo album. He filled $3\frac{1}{4}$ pages with pictures. How many pages did he have left to fill? ________

Checking Up

Reduce to lowest terms.

1. $\frac{6}{9} = \_\_\_\_$ $\quad \frac{6}{8} = \_\_\_\_$ $\quad \frac{8}{12} = \_\_\_\_$ $\quad \frac{8}{16} = \_\_\_\_$ $\quad \frac{4}{8} = \_\_\_\_$ $\quad \frac{6}{16} = \_\_\_\_$ $\quad \frac{2}{4} = \_\_\_\_$

Change to equivalent fractions.

2. $\frac{8}{12} = \frac{\_}{6}$ $\quad \frac{2}{3} = \frac{\_}{6}$ $\quad \frac{2}{5} = \frac{\_}{10}$ $\quad \frac{4}{8} = \frac{\_}{2}$ $\quad \frac{4}{6} = \frac{\_}{12}$ $\quad \frac{5}{8} = \frac{\_}{16}$

Rename the whole number as indicated.

3. $5\frac{1}{4} = 4\frac{\_}{4}$ $\quad 6\frac{1}{2} = 5\frac{\_}{2}$ $\quad 4\frac{3}{8} = 3\frac{\_}{8}$ $\quad 7\frac{1}{3} = 6\frac{\_}{3}$ $\quad 2\frac{1}{5} = 1\frac{\_}{5}$ $\quad 6\frac{2}{5} = 5\frac{\_}{5}$

Subtract.

4.
$$\begin{array}{r} \frac{7}{8} \\ -\frac{1}{8} \\ \hline \end{array} \qquad \begin{array}{r} \frac{5}{6} \\ -\frac{1}{6} \\ \hline \end{array} \qquad \begin{array}{r} \frac{3}{4} \\ -\frac{1}{4} \\ \hline \end{array} \qquad \begin{array}{r} \frac{7}{8} \\ -\frac{5}{8} \\ \hline \end{array} \qquad \begin{array}{r} \frac{5}{8} \\ -\frac{3}{8} \\ \hline \end{array}$$

5.
$$\begin{array}{r} \frac{1}{3} \\ -\frac{1}{4} \\ \hline \end{array} \qquad \begin{array}{r} \frac{7}{8} \\ -\frac{1}{4} \\ \hline \end{array} \qquad \begin{array}{r} \frac{2}{3} \\ -\frac{1}{2} \\ \hline \end{array} \qquad \begin{array}{r} \frac{1}{3} \\ -\frac{1}{9} \\ \hline \end{array} \qquad \begin{array}{r} \frac{7}{9} \\ -\frac{1}{2} \\ \hline \end{array} \qquad \begin{array}{r} \frac{7}{12} \\ -\frac{1}{3} \\ \hline \end{array}$$

6.
$$\begin{array}{r} 5\frac{9}{10} \\ -\ \frac{7}{8} \\ \hline \end{array} \qquad \begin{array}{r} 6\frac{3}{8} \\ -\ \frac{1}{4} \\ \hline \end{array} \qquad \begin{array}{r} 9\frac{6}{7} \\ -\ \frac{2}{3} \\ \hline \end{array} \qquad \begin{array}{r} 12\frac{4}{5} \\ -\ \frac{1}{2} \\ \hline \end{array} \qquad \begin{array}{r} 27\frac{11}{12} \\ -\ \frac{7}{8} \\ \hline \end{array}$$

7.
$$\begin{array}{r} 12\frac{3}{4} \\ -\ 4\frac{1}{2} \\ \hline \end{array} \qquad \begin{array}{r} 4\frac{1}{2} \\ -2\frac{1}{3} \\ \hline \end{array} \qquad \begin{array}{r} 6\frac{1}{2} \\ -3\frac{1}{10} \\ \hline \end{array} \qquad \begin{array}{r} 15\frac{1}{3} \\ -\ 4\frac{1}{8} \\ \hline \end{array}$$

8.
$$\begin{array}{r} 22 \\ -12\frac{1}{2} \\ \hline \end{array} \qquad \begin{array}{r} 2 \\ -\ \frac{1}{3} \\ \hline \end{array} \qquad \begin{array}{r} 14 \\ -\ 6\frac{2}{5} \\ \hline \end{array} \qquad \begin{array}{r} 5 \\ -\ \frac{3}{4} \\ \hline \end{array} \qquad \begin{array}{r} 24 \\ -13\frac{5}{12} \\ \hline \end{array}$$

9.
$$\begin{array}{r} 8\frac{1}{6} \\ -4\frac{3}{4} \\ \hline \end{array} \qquad \begin{array}{r} 9\frac{1}{4} \\ -2\frac{3}{4} \\ \hline \end{array} \qquad \begin{array}{r} 7\frac{1}{8} \\ -4\frac{3}{4} \\ \hline \end{array} \qquad \begin{array}{r} 15\frac{1}{6} \\ -\ 4\frac{5}{6} \\ \hline \end{array}$$

Solve.

Do Your Work Here

10. Dick spent $2\frac{3}{8}$ hours walking to the lake and only $1\frac{1}{8}$ hours walking back. How much faster was the trip back? ________

Multiplying Fractions by Fractions

To multiply fractions, multiply the numerators and multiply the denominators. Simplify the answer.

Find: $\frac{1}{7} \times \frac{4}{5}$

Multiply the numerators.

$$\frac{1}{7} \times \frac{4}{5} = \frac{1 \times 4}{\quad} = \frac{4}{\quad}$$

Multiply the denominators.

$$\frac{1}{7} \times \frac{4}{5} = \frac{1 \times 4}{7 \times 5} = \frac{4}{35}$$

Find: $\frac{2}{3} \times \frac{3}{8}$

Multiply the numerators.

$$\frac{2}{3} \times \frac{3}{8} = \frac{2 \times 3}{\quad} = \frac{6}{\quad}$$

Multiply the denominators.
Simplify.

$$\frac{2}{3} \times \frac{3}{8} = \frac{2 \times 3}{3 \times 8} = \frac{6}{24} = \frac{1}{4}$$

Multiply these problems. Write answers in lowest terms.

1.	$\frac{1}{3} \times \frac{1}{3} = \frac{1}{9}$	$\frac{1}{3} \times \frac{1}{4} =$	$\frac{1}{2} \times \frac{1}{2} =$	$\frac{1}{3} \times \frac{1}{2} =$
2.	$\frac{1}{4} \times \frac{2}{5} = \frac{2}{20} = \frac{1}{10}$	$\frac{2}{4} \times \frac{1}{5} =$	$\frac{2}{3} \times \frac{1}{4} =$	$\frac{1}{5} \times \frac{2}{10} =$
3.	$\frac{2}{9} \times \frac{2}{3} =$	$\frac{3}{5} \times \frac{2}{3} =$	$\frac{2}{3} \times \frac{3}{4} =$	$\frac{2}{5} \times \frac{5}{8} =$
4.	$\frac{4}{9} \times \frac{3}{5} =$	$\frac{2}{5} \times \frac{3}{10} =$	$\frac{2}{5} \times \frac{3}{8} =$	$\frac{4}{5} \times \frac{3}{10} =$
5.	$\frac{1}{3} \times \frac{2}{3} =$	$\frac{4}{5} \times \frac{1}{4} =$	$\frac{1}{5} \times \frac{3}{10} =$	$\frac{1}{6} \times \frac{1}{3} =$
6.	$\frac{3}{4} \times \frac{1}{4} =$	$\frac{7}{10} \times \frac{1}{5} =$	$\frac{3}{8} \times \frac{1}{6} =$	$\frac{2}{3} \times \frac{3}{7} =$
7.	$\frac{2}{5} \times \frac{1}{5} =$	$\frac{1}{3} \times \frac{3}{5} =$	$\frac{1}{7} \times \frac{2}{7} =$	$\frac{2}{9} \times \frac{1}{2} =$
8.	$\frac{3}{4} \times \frac{4}{5} =$	$\frac{3}{10} \times \frac{1}{3} =$	$\frac{1}{2} \times \frac{2}{7} =$	$\frac{2}{5} \times \frac{3}{7} =$

Solve.

Do Your Work Here

9. For a picnic, we made ice cream. We used an 8-quart freezer, and it was three fourths full when the ice cream was frozen. How many quarts of ice cream did we have? ______

10. Mrs. Denman bought a loaf of bread which weighed three fourths of a pound. If her family ate half of the loaf, how much bread was left? ______

11. Marsha lived $\frac{9}{16}$ mile from town. Liz lived only one half as far from town. How far did Liz live from town? ______

Using Cancellation

Instead of simplifying fractions after they have been multiplied, it may be possible to use **cancellation** before multiplying. To cancel, divide the numerator and the denominator by the same number, or common factor. Then multiply, using the new numerator and denominator.

Find: $\frac{3}{10} \times \frac{1}{9}$

Find a number which will divide into both the 3 and the 9. $\frac{3}{10} \times \frac{1}{9}$	Cancel by dividing both the 3 and the 9 by 3. $\frac{\overset{1}{\cancel{3}}}{10} \times \frac{1}{\underset{3}{\cancel{9}}}$	Multiply the new numerators and denominators. $\frac{1 \times 1}{10 \times 3} = \frac{1}{30}$

Work the following problems using cancellation.

1. $\frac{1}{3} \times \frac{6}{7} =$ $\qquad$ $\frac{3}{5} \times \frac{1}{9} =$ $\qquad$ $\frac{2}{5} \times \frac{3}{4} =$ $\qquad$ $\frac{4}{5} \times \frac{15}{16} =$ $\qquad$ $\frac{1}{6} \times \frac{3}{7} =$

$$\frac{1}{\underset{1}{\cancel{3}}} \times \frac{\overset{2}{\cancel{6}}}{7} = \frac{1 \times 2}{1 \times 7} = \frac{2}{7}$$

2. $\frac{2}{5} \times \frac{5}{8} =$ $\qquad$ $\frac{1}{4} \times \frac{2}{5} =$ $\qquad$ $\frac{1}{3} \times \frac{3}{7} =$ $\qquad$ $\frac{3}{5} \times \frac{10}{16} =$ $\qquad$ $\frac{2}{3} \times \frac{3}{4} =$

3. $\frac{5}{9} \times \frac{3}{10} =$ $\qquad$ $\frac{7}{8} \times \frac{2}{7} =$ $\qquad$ $\frac{5}{12} \times \frac{4}{15} =$ $\qquad$ $\frac{2}{7} \times \frac{7}{9} =$ $\qquad$ $\frac{3}{8} \times \frac{4}{9} =$

$$\frac{\overset{1}{\cancel{5}}}{\underset{3}{\cancel{9}}} \times \frac{\overset{1}{\cancel{3}}}{\underset{2}{\cancel{10}}} = \frac{1 \times 1}{3 \times 2} = \frac{1}{6}$$

4. $\frac{3}{4} \times \frac{4}{5} =$ $\qquad$ $\frac{2}{3} \times \frac{6}{7} =$ $\qquad$ $\frac{6}{7} \times \frac{5}{12} =$ $\qquad$ $\frac{5}{11} \times \frac{3}{10} =$ $\qquad$ $\frac{4}{7} \times \frac{7}{9} =$

5. $\frac{4}{9} \times \frac{3}{4} =$ $\qquad$ $\frac{5}{6} \times \frac{3}{10} =$ $\qquad$ $\frac{5}{8} \times \frac{4}{9} =$ $\qquad$ $\frac{3}{5} \times \frac{5}{9} =$ $\qquad$ $\frac{7}{8} \times \frac{4}{7} =$

6. $\frac{7}{12} \times \frac{4}{7} =$ $\qquad$ $\frac{1}{8} \times \frac{8}{9} =$ $\qquad$ $\frac{3}{4} \times \frac{1}{6} =$ $\qquad$ $\frac{5}{7} \times \frac{7}{15} =$ $\qquad$ $\frac{3}{16} \times \frac{8}{9} =$

Solve the following word problems.

Do Your Work Here

7. Terry lives $\frac{6}{8}$ mile from town. Patricia lives halfway between Terry and town. How far from town does Patricia live? ______

8. Ms. Miller lives $\frac{9}{16}$ mile from her office. Mr. Brown lives only one third as far from his office. How far is it to Mr. Brown's office? ______

Checking Up

Simplify these improper fractions.

1. $\frac{9}{2} =$ ______ $\frac{17}{5} =$ ______ $\frac{10}{3} =$ ______ $\frac{20}{6} =$ ______ $\frac{8}{3} =$ ______ $\frac{24}{7} =$ ______

2. $\frac{10}{4} =$ ______ $\frac{15}{10} =$ ______ $\frac{16}{3} =$ ______ $\frac{12}{5} =$ ______ $\frac{21}{8} =$ ______ $\frac{19}{4} =$ ______

Change to an improper fraction.

3. $4\frac{1}{2} =$ ______ $5 =$ ______ $6\frac{1}{3} =$ ______ $7\frac{1}{4} =$ ______ $3 =$ ______ $4\frac{1}{8} =$ ______

4. $5\frac{2}{5} =$ ______ $7\frac{3}{4} =$ ______ $9 =$ ______ $6\frac{3}{5} =$ ______ $15\frac{3}{10} =$ ______ $12\frac{5}{8} =$ ______

Multiply. Cancel when possible.

5. $\frac{4}{7} \times \frac{3}{4} =$ $\frac{9}{10} \times \frac{2}{3} =$ $\frac{5}{6} \times \frac{2}{5} =$ $\frac{3}{4} \times \frac{5}{6} =$ $\frac{5}{6} \times \frac{5}{8} =$

6. $\frac{1}{2} \times \frac{2}{3} =$ $\frac{1}{2} \times \frac{4}{5} =$ $\frac{3}{8} \times \frac{4}{9} =$ $\frac{2}{5} \times \frac{15}{32} =$ $\frac{3}{16} \times \frac{8}{9} =$

7. $18 \times \frac{1}{2} =$ $15 \times \frac{1}{3} =$ $12 \times \frac{1}{4} =$ $32 \times \frac{1}{8} =$ $45 \times \frac{1}{5} =$

8. $\frac{2}{3} \times 24 =$ $\frac{3}{4} \times 24 =$ $\frac{2}{5} \times 15 =$ $\frac{3}{8} \times 40 =$ $\frac{7}{10} \times 50 =$

9. $\frac{1}{3} \times 6\frac{1}{2} =$ $2\frac{1}{2} \times \frac{2}{5} =$ $8 \times 8\frac{1}{4} =$ $4\frac{3}{4} \times 8 =$ $\frac{1}{2} \times 2\frac{5}{9} =$

10. $12\frac{1}{2} \times 2\frac{2}{5} =$ $\frac{1}{4} \times 3\frac{1}{3} =$ $3\frac{1}{3} \times 7\frac{1}{2} =$ $6 \times 8\frac{3}{4} =$ $8\frac{3}{4} \times 9\frac{2}{7} =$

Solve.

Do Your Work Here

11. Anna Polansky bought $\frac{3}{4}$ yard of dress material at $4.00 per yard. How much did she pay? ______

12. Bert Williams made kitchen towels $\frac{2}{3}$ yard in length. How much material did he need for a dozen kitchen towels? ______

13. Joe bought $3\frac{1}{2}$ quarts of strawberries at the store for $2.00 a quart. How much did he have to pay for them? ______

14. The baker used 12 one-quarter-pound bars of chocolate for a recipe which called for 3 pounds. Did the baker use the right amount? ______

Making Sure of Fractions—Multiplication

Multiply. Simplify.

1. $\frac{2}{5} \times \frac{2}{3} =$ $\frac{5}{6} \times \frac{3}{4} =$ $\frac{2}{3} \times \frac{3}{7} =$

2. $\frac{3}{4} \times \frac{7}{12} =$ $\frac{1}{2} \times \frac{3}{8} =$ $\frac{12}{23} \times \frac{3}{4} =$

3. $\frac{15}{16} \times 4 =$ $20 \times \frac{2}{5} =$ $24 \times \frac{7}{10} =$

4. $\frac{1}{3} \times 4 =$ $\frac{1}{2} \times 3 =$ $3 \times \frac{1}{5} =$

5. $6\frac{1}{4} \times \frac{3}{5} =$ $\frac{3}{8} \times 4\frac{4}{5} =$ $1\frac{7}{8} \times \frac{4}{15} =$

6. $7\frac{2}{3} \times \frac{1}{2} =$ $2\frac{1}{2} \times \frac{1}{3} =$ $\frac{1}{2} \times 3\frac{1}{2} =$

7. $9\frac{1}{2} \times \frac{1}{8} =$ $2\frac{1}{3} \times \frac{6}{7} =$ $\frac{2}{5} \times 5\frac{1}{4} =$

8. $3\frac{1}{2} \times 1\frac{3}{5} =$ $2\frac{2}{9} \times 4\frac{1}{2} =$ $2\frac{9}{16} \times 2\frac{2}{3} =$

9. $5\frac{1}{3} \times 1\frac{3}{8} =$ $1\frac{1}{2} \times 1\frac{3}{4} =$ $4\frac{3}{5} \times 3\frac{1}{3} =$

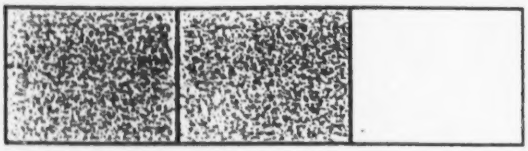
Solve.

Do Your Work Here

10. Peter kept $\frac{3}{5}$ of his salary for expenses. If $\frac{2}{3}$ of his expenses was spent on housing, what part of his salary was spent on housing? ______

11. In a survey, $\frac{2}{3}$ of the people said they drove to work. Of those who drove to work, $\frac{1}{6}$ said they took the toll road. What part of those who drove to work took the toll road? ______

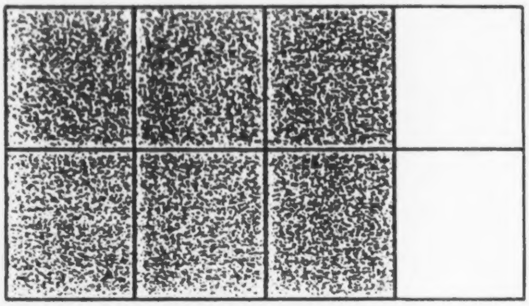
Dividing Fractions by Whole Numbers



Two thirds of the rectangle at the right is shaded. If this shaded part is divided into two equal parts, what portion of the whole rectangle will **one** part be?

$\frac{2}{3} \div 2 =$ ______ third

Remember that dividing by two is the same as multiplying by $\frac{1}{2}$. Therefore, $\frac{2}{3} \div 2$ is the same as $\frac{2}{3} \times \frac{1}{2}$. How much is $\frac{2}{3} \times \frac{1}{2}$? Does your answer agree with the illustrated rectangle?



The rectangle at the right is divided into 8 parts. Six of these parts are shaded.

If the shaded area is divided by 2, what portion of the whole rectangle will one of these two parts be?

$\frac{6}{8} \div 2 =$ ______ eighths

Again, remembering that dividing by 2 is the same as multiplying by $\frac{1}{2}$, change $\frac{6}{8} \div 2$ to read $\frac{6}{8} \times \frac{1}{2}$. How much is $\frac{6}{8} \times \frac{1}{2}$? Does this agree with the illustration at the right?

In dividing a fraction by a whole number, if the whole number will divide evenly into the numerator, you can use that procedure. In the first illustration, 2 is contained in the numerator 2 exactly once, giving an answer of $\frac{1}{3}$. In the second illustration, 2 goes into the numerator 6 exactly three times, giving an answer of $\frac{3}{8}$. There is one rule that fits all occasions:

To divide with fractions, invert the divisor and multiply. Invert means to turn over. Thus, in the above illustrations, 2 inverted becomes $\frac{1}{2}$, since 2 can be written in fraction form as $\frac{2}{1}$.

Complete these sentences.

1. 2 inverted is ____. 3 inverted is ____. 5 inverted is ____. 10 inverted is ____.

2. $\frac{1}{2}$ inverted is ____. $\frac{1}{3}$ inverted is ____. $\frac{1}{4}$ inverted is ____. $\frac{1}{5}$ inverted is ____.

3. $\frac{2}{3}$ inverted is ____. $\frac{3}{4}$ inverted is ____. $\frac{5}{8}$ inverted is ____. $\frac{7}{8}$ inverted is ____.

Divide. Remember to invert the divisor and multiply. Cancel if possible.

4. $\frac{8}{9} \div 2 =$ $\frac{2}{3} \div 2 =$ $\frac{3}{8} \div 3 =$ $\frac{5}{8} \div 5 =$ $\frac{2}{5} \div 4 =$

$\frac{\overset{4}{\cancel{8}}}{9} \times \frac{1}{\underset{1}{\cancel{2}}} = \frac{4 \times 1}{9 \times 1} = \frac{4}{9}$

5. $\frac{4}{5} \div 2 =$ $\frac{5}{8} \div 10 =$ $\frac{5}{6} \div 12 =$ $\frac{7}{8} \div 3 =$ $\frac{5}{9} \div 6 =$

6. $\frac{3}{7} \div 4 =$ $\frac{5}{18} \div 3 =$ $\frac{5}{11} \div 2 =$ $\frac{7}{12} \div 3 =$ $\frac{9}{16} \div 4 =$

Checking Up

Change to improper fractions.

1. $4\frac{1}{3} =$ $5 =$ $6\frac{2}{5} =$ $8 =$ $15\frac{2}{3} =$ $25\frac{3}{4} =$ $17 =$ $100\frac{1}{2} =$

Rename these improper fractions as mixed numbers.

2. $\frac{17}{3} =$ $\frac{19}{4} =$ $\frac{31}{5} =$ $\frac{19}{6} =$ $\frac{17}{8} =$ $\frac{47}{9} =$ $\frac{33}{10} =$

Reduce each fraction to simplest form.

3. $\frac{10}{15} =$ $\frac{12}{18} =$ $\frac{9}{12} =$ $\frac{16}{40} =$ $\frac{25}{45} =$ $\frac{32}{24} =$ $\frac{52}{10} =$

Complete these sentences.

4. 6 inverted is ______. $\frac{2}{3}$ inverted is ______. $\frac{1}{2}$ inverted is ______. $\frac{9}{2}$ inverted is ______.

Divide.

5. $\frac{5}{8} \div 10 =$ $\frac{4}{5} \div 8 =$ $\frac{3}{5} \div 5 =$ $\frac{3}{4} \div 6 =$ $\frac{2}{3} \div 4 =$

6. $\frac{1}{3} \div \frac{1}{6} =$ $\frac{1}{6} \div \frac{1}{3} =$ $\frac{3}{5} \div \frac{9}{10} =$ $\frac{3}{8} \div \frac{3}{5} =$ $\frac{5}{8} \div \frac{3}{4} =$

7. $6 \div \frac{1}{2} =$ $10 \div \frac{2}{3} =$ $15 \div \frac{3}{5} =$ $2 \div \frac{4}{5} =$ $3 \div \frac{5}{8} =$

8. $3\frac{1}{3} \div 10 =$ $2\frac{1}{5} \div 4 =$ $5\frac{1}{4} \div 3 =$ $1\frac{4}{5} \div 9 =$ $4\frac{1}{2} \div 3 =$

9. $1\frac{7}{12} \div \frac{3}{4} =$ $3\frac{3}{4} \div \frac{1}{2} =$ $3\frac{2}{3} \div \frac{11}{12} =$ $1\frac{4}{7} \div \frac{1}{7} =$ $2\frac{2}{9} \div \frac{4}{5} =$

10. $8\frac{1}{3} \div 1\frac{1}{4} =$ $6\frac{2}{5} \div 5\frac{1}{3} =$ $1\frac{1}{3} \div 2\frac{2}{3} =$ $5\frac{2}{5} \div 1\frac{3}{5} =$ $1\frac{1}{5} \div 2\frac{4}{5} =$

Solve.

11. A farmer wants to divide a 10-acre field into $2\frac{1}{2}$ acre fields. How many fields would there be?

Answer ____________________

12. A grocer wants to stack 36 cases of fruit drinks in a display. She wants $4\frac{1}{2}$ cases in each stack. How many stacks will she have?

Answer ____________________

Making Sure of Fractions—Division

[illegible]vide. Simplify.

1. $\frac{1}{4} \div \frac{1}{8} =$ $\quad$ $\frac{3}{5} \div \frac{1}{5} =$ $\quad$ $\frac{1}{3} \div \frac{1}{2} =$

2. $\frac{1}{2} \div \frac{1}{4} =$ $\quad$ $\frac{2}{9} \div \frac{7}{12} =$ $\quad$ $\frac{1}{3} \div \frac{3}{5} =$

3. $4 \div \frac{1}{2} =$ $\quad$ $8 \div \frac{4}{5} =$ $\quad$ $10 \div \frac{5}{6} =$

4. $12 \div \frac{3}{4} =$ $\quad$ $3 \div \frac{1}{2} =$ $\quad$ $\frac{1}{3} \div 9 =$

5. $5\frac{2}{3} \div 3 =$ $\quad$ $2\frac{1}{4} \div 6 =$ $\quad$ $8\frac{1}{2} \div 4 =$

6. $9\frac{7}{9} \div \frac{5}{6} =$ $\quad$ $6\frac{2}{3} \div \frac{1}{4} =$ $\quad$ $8\frac{2}{3} \div \frac{1}{3} =$

7. $5\frac{1}{2} \div \frac{1}{2} =$ $\quad$ $6\frac{2}{3} \div \frac{1}{5} =$ $\quad$ $1\frac{3}{8} \div \frac{2}{3} =$

8. $6\frac{4}{5} \div 1\frac{1}{5} =$ $\quad$ $12\frac{1}{3} \div 6\frac{3}{4} =$ $\quad$ $6\frac{2}{5} \div 5\frac{1}{3} =$

9. $7\frac{1}{2} \div 4\frac{3}{5} =$ $\quad$ $2\frac{1}{2} \div 1\frac{1}{3} =$ $\quad$ $2\frac{1}{4} \div 2\frac{1}{2} =$

Solve.

Do Your Work Here

10. Yolanda wants to make scarves from $\frac{3}{4}$ yard of silk. If she needs $\frac{1}{8}$ yard for each scarf, how many scarves can she make? ________

11. Raul ordered 7 pizzas for his party. Each person at the party was given $\frac{1}{3}$ of a pizza. If no pizza was left over, how many people attended Raul's party? ________

Unit 2 Review

Perform the indicated operation.

1. $\begin{array}{r} \frac{9}{10} \\ +\frac{2}{3} \\ \hline \end{array}$ $\quad \begin{array}{r} 5\frac{3}{5} \\ +3\frac{3}{4} \\ \hline \end{array}$ $\quad \begin{array}{r} \frac{3}{5} \\ -\frac{1}{10} \\ \hline \end{array}$ $\quad \begin{array}{r} 12\frac{5}{6} \\ -\frac{2}{5} \\ \hline \end{array}$ $\quad \begin{array}{r} 2\frac{2}{3} \\ +\frac{7}{8} \\ \hline \end{array}$

2. $\begin{array}{r} \frac{7}{8} \\ +\frac{1}{2} \\ \hline \end{array}$ $\quad \begin{array}{r} 8\frac{2}{3} \\ -2\frac{2}{5} \\ \hline \end{array}$ $\quad \begin{array}{r} 10 \\ -\frac{3}{16} \\ \hline \end{array}$ $\quad \begin{array}{r} \frac{2}{5} \\ +6\frac{1}{4} \\ \hline \end{array}$ $\quad \begin{array}{r} 24\frac{1}{5} \\ -10\frac{2}{3} \\ \hline \end{array}$

3. $\begin{array}{r} \frac{3}{4} \\ \frac{1}{6} \\ +\frac{1}{2} \\ \hline \end{array}$ $\quad \begin{array}{r} 8 \\ -\frac{7}{10} \\ \hline \end{array}$ $\quad \begin{array}{r} 13\frac{3}{4} \\ -\frac{2}{3} \\ \hline \end{array}$ $\quad \begin{array}{r} \frac{5}{8} \\ \frac{1}{4} \\ +\frac{1}{2} \\ \hline \end{array}$ $\quad \begin{array}{r} 6\frac{1}{9} \\ +4\frac{2}{3} \\ \hline \end{array}$

4. $\frac{3}{4} \times \frac{8}{9} =$ $\quad \frac{9}{10} \times \frac{2}{3} =$ $\quad 3 \times \frac{1}{6} =$ $\quad \frac{3}{5} \times 25 =$

5. $2\frac{2}{3} \times 6 =$ $\quad 3\frac{1}{2} \times \frac{1}{2} =$ $\quad 2\frac{2}{5} \times 6\frac{1}{4} =$ $\quad 1\frac{3}{10} \times 3\frac{1}{8} =$

6. $\frac{5}{6} \times \frac{3}{10} =$ $\quad 2\frac{1}{2} \times 4 =$ $\quad 3\frac{1}{3} \times 4\frac{3}{4} =$ $\quad \frac{7}{8} \times 3\frac{1}{2} =$

7. $\frac{7}{8} \div 14 =$ $\quad \frac{9}{10} \div \frac{3}{5} =$ $\quad 17 \div \frac{1}{3} =$ $\quad 3\frac{1}{3} \div 5 =$

8. $\frac{3}{4} \div \frac{1}{12} =$ $\quad \frac{5}{6} \div 15 =$ $\quad 3\frac{1}{4} \div 2\frac{1}{2} =$ $\quad 6 \div \frac{2}{3} =$

9. $5\frac{1}{3} \div \frac{1}{3} =$ $\quad 12 \div 2\frac{2}{5} =$ $\quad 3\frac{1}{3} \div 4\frac{1}{6} =$ $\quad 4\frac{2}{3} \div 5\frac{1}{4} =$

Solve the following word problems.

10. Maria bought $25\frac{1}{2}$ yards of red ribbon, $32\frac{3}{4}$ yards of blue ribbon, and $40\frac{1}{4}$ yards of yellow ribbon. How much ribbon did she buy?

Answer ____________________

11. From New Orleans to El Paso is 1,224 miles. The fast train makes this trip in $22\frac{2}{3}$ hours. What is the average speed?

Answer ____________________

12. Meili bought $3\frac{1}{2}$ dozen eggs. She used $\frac{1}{3}$ dozen. How many dozen eggs are left?

Answer ____________________

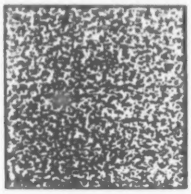
13. A ream of paper is $2\frac{1}{4}$ in. thick. How many reams will fit on a shelf 9 in. high?

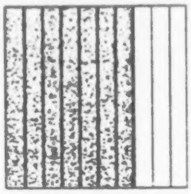
Answer ____________________

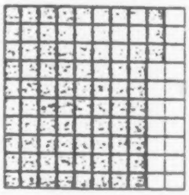
Unit 3 Decimals

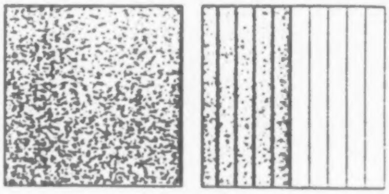
The Meaning of Decimals

Like fractions, decimals show parts of a whole. The shaded portion of each picture can be written as a fraction or as a decimal.


$\frac{1}{1}$ or 1


$\frac{7}{10}$ or 0.7


$\frac{83}{100}$ or 0.83

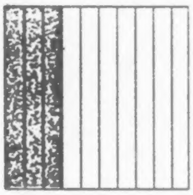

1 $\frac{5}{10}$ or 1.5

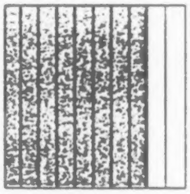
Read: one seven tenths eighty-three hundredths one and five tenths

Remember,

- a decimal point separates a whole number and its decimal parts.
- a whole number has a decimal point but it is usually not written. For example, 2 = 2.0 and $9 = $9.00.
- a decimal point is read as "and."
- a zero in front of a decimal is a placeholder. For example, $0.25 = $.25 and 0.36 = .36.

Write the decimal shown by the shaded part of each figure.


0.3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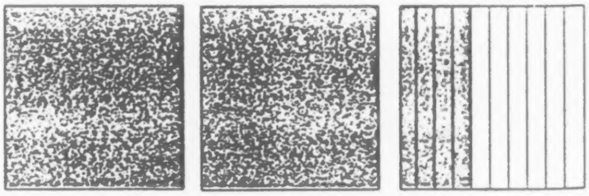
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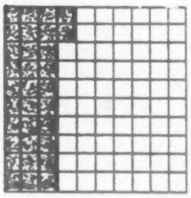
2.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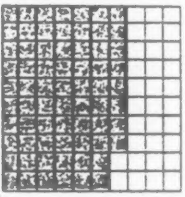
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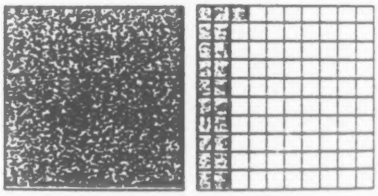

____

Write each money amount with a dollar sign and a decimal point.

3. one dollar $1.00 ten cents $0.10 one penny $0.01

4. twelve dollars ________ three dimes ________ eight pennies ________

five dollars and eleven cents ________ thirty-seven cents ________ sixty-four cents ________

James T. Shea, Basic Essentials of Mathematics: Book One (Texas: Steck-Vaughn Co., 1991) pp. 76-80, 86-87, 90, 93, 110-112.

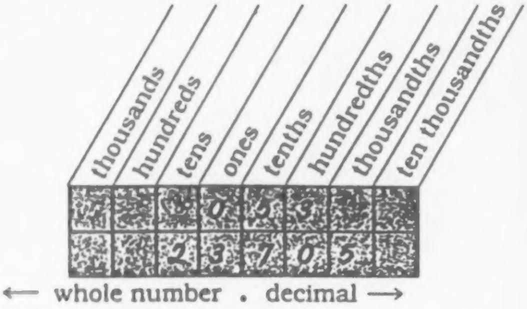
Reading and Writing Decimals

To read a decimal, read as a whole number. Then name the place value of the last digit.

Read and write 0.53 as fifty-three hundredths.

To read a decimal that has a whole number part,

- read the whole number part.
- read the decimal point as "and."
- read the decimal part as a whole number and then name the place value of the last digit.



Read and write 23.705 as twenty-three and seven hundred five thousandths.

Read and write the following as decimals.

1. three tenths 0.3 ____ 15 ten thousandths ____
2. 25 thousandths ____ five thousandths ____
3. 15 hundredths ____ three-tenths foot ____
4. five tenths of a yard ____ seventy-five hundredths of a mile ____
5. 15 thousandths of an inch ____ 4 hundredths of a mile ____
6. 25 hundredths of a ton ____ 25 ten thousandths ____

Write the following decimals in word form.

7. A dime is 0.1 of a dollar one tenth ____
8. A cent is 0.01 of a dollar ____
9. A mill is 0.1 of a cent ____
10. A quarter is 0.25 of a dollar ____
11. A half-dollar is 0.5 or 0.50 of a dollar ____
12. A gallon of water weighs 8.23 lb ____
13. A gallon of milk averages 8.59 lb ____
14. A knot is equal to 1.1516 miles ____
15. A meter is 39.37 inches ____
16. A kilometer equals 0.621 mile ____

Making use of the illustrations in the box above, read these decimals.

17. 0.5 0.002 1,892.105 3,456.101
18. 0.05 0.012 2,236.1 2,987.17
19. 0.005 125.15 1,594.001 3,642.9

Comparing and Ordering Decimals

To compare two decimal numbers, begin at the left. Compare the digits in each place.

The symbol < means "is less than." $4.2 < 4.6$
The symbol > means "is greater than." $2.7 > 2.3$
The symbol = means "is equal to." $3.4 = 3.40$

Compare: 2.6 and 2.3

2 . 6
2 . 3

The ones digits are the same. Compare the tenths.

6 > 3, so 2.6 > 2.3

Compare: 0.08 and 0.25

0 . 0 8
0 . 2 5

The ones digits are the same. Compare the tenths.

0 < 2, so 0.08 < 0.25

Compare: 0.4 and 0.47

0 . 4 0
0 . 4 7

Write a zero. The ones and tenths digits are the same. Compare the hundredths.

0 < 7, so 0.4 < 0.47

Compare. Write <, >, or =.

1. 0.3 __<__ 0.32 0.035 ______ 0.35 0.87 ______ 0.087 0.5 ______ 0.500

0 . 3 0
0 . 3 2

2. 0.135 ______ 0.14 0.15 ______ 0.115 9.99 ______ 9.09 3.2 ______ 3.20

Compare the numbers in each pair. Draw a line under the one which is larger. If the two numbers are equal, draw a line under both.

3. 0.3 and 0.30 0.5 and 0.500 0.053 and 0.53 0.25 and 0.3

4. 3.5 and 3.50 4.50 and 4.500 0.125 and 13 0.51 and 0.151

5. 0.625 and 0.6250 0.035 and 0.0350 0.26 and 0.3 0.6 and 0.65

Write these numbers in order, beginning with the smallest.

6. 25, 2.5, 0.25, 1.25, 1.025, 1.20, 1.1, 1.01 ______________________________

When the numbers in each pair below are the same, write *S* on the line. When they are not the same, write *D* on the line.

7. One hundred twenty-five — 0.125 __D__ Three fourths — 0.34 ______

8. One and six tenths — 1.6 ______ Four twenty-fifths — 4.25 ______

9. Thirty-five and one half — 35.2 ______ Eight thousandths — 0.008 ______

10. Ten and one fifth — 10.5 ______ Five and one tenth — 5.10 ______

Fraction and Decimal Equivalents

Sometimes you will need to either change a decimal to a fraction or a fraction to a decimal. Notice that the number of decimal places in the decimal is the same as the number of zeros in the denominator.

one tenth = $\frac{1}{10}$ = 0.1

five tenths = $\frac{5}{10}$ = 0.5

one and six tenths = $1\frac{6}{10}$ = 1.6

six and fifteen hundredths = $6\frac{15}{100}$ = 6.15

one hundredth = $\frac{1}{100}$ = 0.01

twelve hundredths = $\frac{12}{100}$ = 0.12

one thousandth = $\frac{1}{1000}$ = 0.001

fifteen thousandths = $\frac{15}{1000}$ = 0.015

In each column, write the equivalent numbers in words, fractions, or decimals.

	COLUMN A	COLUMN B	COLUMN C
1.	three tenths	$\frac{3}{10}$	0.3
2.	fifteen hundredths		
3.		$\frac{5}{1000}$	
4.			0.027
5.			4.6
6.		$15\frac{7}{10}$	
7.	thirty and three hundredths		
8.	one hundred twenty and two thousandths		

Not all fractions can be changed to decimal form easily. To write fractions that have denominators other than 10, 100, or 1,000 as decimals, first write an equivalent fraction that has a denominator of 10, 100, or 1,000. Then write the equivalent fraction as a decimal.

Write $\frac{1}{5}$ as a decimal.

Write $\frac{1}{5}$ with 10 as the denominator.

$\frac{1}{5} = \frac{1 \times 2}{5 \times 2} = \frac{2}{10}$

Write the fraction as a decimal.

$= 0.2$

Write $2\frac{3}{4}$ as a decimal.

Write $2\frac{3}{4}$ as an improper fraction.

$2\frac{3}{4} = \frac{11}{4}$

Write the new fraction with 100 as the denominator.

$\frac{11}{4} = \frac{11 \times 25}{4 \times 25} = \frac{275}{100}$

Write the fraction as a decimal.

$= 2.75$

Change each fraction to an equivalent fraction and then to a decimal.

9. $\frac{1}{5} = \frac{1 \times 2}{5 \times 2} = \frac{2}{10} = 0.2$ $\quad \frac{3}{5} =$ $\quad \frac{4}{5} =$ $\quad \frac{1}{2} =$

10. $4\frac{4}{25} = \frac{104 \times 4}{25 \times 4} = \frac{416}{100} = 4.16$ $\quad 2\frac{7}{20} =$ $\quad 1\frac{9}{25} =$ $\quad 3\frac{42}{50} =$

Rounding Decimals

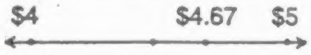
Rounding decimals can be used to tell about how many. You can use a number line to round decimals.

Remember, when a number is halfway, always round up.

Round 31.2 to the nearest one.

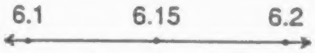
31.2 is closer to 31 than to 32
31.2 rounds down to 31

Round $4.67 to the nearest dollar.



$4.67 is closer to $5 than to $4
$4.67 rounds up to $5

Round 6.15 to the nearest tenth.



6.15 is halfway between 6.1 and 6.2
6.15 rounds up to 6.2

Round to the nearest one.

1.	4.4	4	3.6		2.5		8.4		7.3	
2.	49.7	50	51.5		44.6		79.1		55.5	
3.	59.5		99.4		67.3		40.7		79.12	
4.	6.39	6	8.76		5.02		9.93		3.11	
5.	2.71		9.79		8.65		1.01		7.77	

Round each amount to the nearest dollar.

6.	$3.92	$4	$5.47		$7.92		$6.35		$7.81	
7.	$8.04		$2.56		$9.53		$6.06		$7.77	
8.	$21.63	$22	$11.58		$20.30		$19.99		$62.62	
9.	$1.21		$6.49		$2.95		$8.50		$9.09	
10.	$16.17		$33.33		$70.07		$99.10		$29.89	

Round to the nearest tenth.

11.	0.58	0.6	0.91		0.64		0.79		0.09	
12.	4.08	4.1	8.67		2.34		9.33		8.88	
13.	61.97	62.0	47.96		99.99		50.95		48.97	
14.	39.96		25.81		72.02		21.63		32.74	
15.	40.94		30.89		55.55		11.64		19.63	

Checking Up

Change each fraction to a decimal.

1. $\frac{1}{10}$ = _____ $\frac{3}{10}$ = _____ $\frac{1}{5}$ = _____ $\frac{1}{2}$ = _____ $\frac{1}{4}$ = _____ $\frac{3}{4}$ = _____

Compare. Write <, >, or =.

2. 0.5 _____ 0.52 0.117 _____ 0.17 0.13 _____ 0.133

3. 0.45 _____ 4.50 0.6 _____ 0.600 0.22 _____ 2.026

Round each amount to the nearest tenth.

4. 3.87 _____ 4.78 _____ 5.21 _____ 6.34 _____ 9.75 _____

Round each amount to the nearest dollar.

5. \$7.98 _____ \$8.46 _____ \$7.33 _____ \$9.18 _____ \$6.50 _____

Write each number as a decimal.

6. Six thousandths _____ Twelve hundredths _____

7. Twenty thousandths _____ Four hundredths _____

8. Four tenths _____ Forty thousandths _____

In each column write the equivalent decimal or fraction in words, fractions, or decimals.

9.	four tenths	_____	_____
10.	_____	$\frac{6}{1000}$	_____
11.	_____	_____	3.7

Add.

12. $\begin{array}{r} 2.005 \\ +\,0.15 \\ \hline \end{array}$ $\begin{array}{r} \$5.07 \\ +\ \ 6.14 \\ \hline \end{array}$ $\begin{array}{r} \$7.14 \\ +\ \ 0.06 \\ \hline \end{array}$ $\begin{array}{r} 0.702 \\ +\,0.0050 \\ \hline \end{array}$ $\begin{array}{l} 17.005 \\ 20.25 \\ +\,16 \\ \hline \end{array}$ $\begin{array}{l} 31.09 \\ 20.036 \\ 50.17 \\ +\,12.4 \\ \hline \end{array}$

Subtract.

13. $\begin{array}{r} 7.54 \\ -\,6.38 \\ \hline \end{array}$ $\begin{array}{r} 5.498 \\ -\,2.362 \\ \hline \end{array}$ $\begin{array}{r} \$7.51 \\ -\ \ 2.28 \\ \hline \end{array}$ $\begin{array}{r} 6.2 \\ -\,4.57 \\ \hline \end{array}$ $\begin{array}{r} \$8.90 \\ -\ \ 4.25 \\ \hline \end{array}$ $\begin{array}{r} 1.9 \\ -\,0.674 \\ \hline \end{array}$

Estimate the sum or difference by rounding to the nearest tenth.

14. 36.08 + 5.92 40.36 − 8.79 186.43 + 34.58

Problem-Solving Strategy: Use Estimation

Many problems can be solved by estimation. Often, you do not need an exact answer to solve a problem. An estimate is found by rounding some or all of the numbers and then doing mental math. An estimate can help you decide if an answer is reasonable.

STEPS

1. **Read the problem.**

   Green Things Plant Shop was having a sale. Tulips were on sale for $0.45 each. Cacti were on sale for $0.79 each. Rose bushes were on sale for $2.99 each.
   Joe has $5.00. If he buys one rose bush, can he also buy two cactus plants?

2. **Identify the important facts.**

   Joe has $5.00.
   One rose bush costs $2.99.
   One cactus plant costs $0.79.

3. **Round.**

   Round $2.99 to the nearest dollar.
   $2.99 rounds to $3.
   Round $0.79 to the nearest tenth of a dollar (dime).
   $0.79 rounds to $0.80.

4. **Solve the problem.**

   Think: $3.00 for a rose bush and 2 × $0.80 = $1.60 for the cactus.
   $3.00 + $1.60 = $4.60
   Joe has enough money because $4.60 < $5.00.

Use estimation to solve each problem. Round to the nearest dollar.

1. Polly wants to buy 2 pounds of T-bone steak at $3.79 per pound. About how much money does she need?

   Answer ______________________

2. Giorgio has $20.00. Can he buy 3 pounds of sirloin steak at $2.39 per pound and 4 pounds of round steak at $1.99 per pound?

   Answer ______________________

3. James bought 3 pounds of round steak at $1.99 per pound and 4 pounds of chuck steak at $1.89 per pound. About how much money did he get back from his 20-dollar bill?

   Answer ______________________

4. T-bone steak costs $3.79 per pound. About how many pounds of T-bone steak can you buy for $29?

   Answer ______________________

Multiplying Decimals by Decimals

To multiply decimals by decimals, multiply as if you were multiplying whole numbers. Place the decimal point in the product by counting the number of decimal places to the right of the decimal point in both numbers. The product will have the same number of decimal places. Write zeros as needed.

Find: 0.48 × 13.7

Multiply. Write the decimal point in the product.

$$\begin{array}{rl} 13.7 & \text{1 place} \\ \times\ 0.48 & \text{+ 2 places} \\ \hline 1096 & \\ 5480 & \\ \hline 6.576 & \text{3 places} \end{array}$$

Find: 0.008 × 0.137

Multiply. Write the decimal point in the product.

$$\begin{array}{rl} 0.137 & \text{3 places} \\ \times\ 0.008 & \text{+ 3 places} \\ \hline 0.001096 & \text{6 places} \end{array}$$

Write 2 zeros.

Multiply. Write zeros if needed.

1. $\begin{array}{r} 0.3 \\ \times\ 0.6 \\ \hline 0.18 \end{array}$ $\begin{array}{r} 0.03 \\ \times\ 0.6 \\ \hline \end{array}$ $\begin{array}{r} 9.8 \\ \times\ 0.5 \\ \hline \end{array}$ $\begin{array}{r} 6.3 \\ \times\ 0.04 \\ \hline \end{array}$ $\begin{array}{r} 1.6 \\ \times\ 0.4 \\ \hline \end{array}$ $\begin{array}{r} 5.3 \\ \times\ 0.09 \\ \hline \end{array}$ $\begin{array}{r} 0.76 \\ \times\ 0.5 \\ \hline \end{array}$

2. $\begin{array}{r} 0.184 \\ \times\ 0.07 \\ \hline 0.01288 \end{array}$ $\begin{array}{r} 2.04 \\ \times\ 0.2 \\ \hline \end{array}$ $\begin{array}{r} 5.19 \\ \times\ 0.03 \\ \hline \end{array}$ $\begin{array}{r} 0.142 \\ \times\ 0.007 \\ \hline \end{array}$ $\begin{array}{r} 0.155 \\ \times\ 0.001 \\ \hline \end{array}$

3. $\begin{array}{r} 2.5 \\ \times\ 5.7 \\ \hline \end{array}$ $\begin{array}{r} 3.47 \\ \times\ 1.4 \\ \hline \end{array}$ $\begin{array}{r} 16.5 \\ \times\ 2.8 \\ \hline \end{array}$ $\begin{array}{r} 7.01 \\ \times\ 0.033 \\ \hline \end{array}$ $\begin{array}{r} 0.981 \\ \times\ 0.034 \\ \hline \end{array}$

4. $\begin{array}{r} 7.05 \\ \times\ 2.04 \\ \hline 2820 \\ 0000 \\ 141000 \\ \hline 14.3820 \end{array}$ $\begin{array}{r} 1.55 \\ \times\ 3.11 \\ \hline \end{array}$ $\begin{array}{r} 0.751 \\ \times\ 3.01 \\ \hline \end{array}$ $\begin{array}{r} 66.6 \\ \times\ 0.123 \\ \hline \end{array}$ $\begin{array}{r} 90.1 \\ \times\ 70.1 \\ \hline \end{array}$

Line up the digits. Then multiply. Write zeros as needed.

5. 0.43 × 0.02 = ________ 0.206 × 0.37 = ________ 8.79 × 6.08 = ________

$\begin{array}{r} 0.43 \\ \times\ 0.02 \\ \hline \end{array}$

6. 3.44 × 0.7 = ________ 2.91 × 0.07 = ________ 6.66 × 0.012 = ________

Dividing Decimals by Decimals

To divide a decimal by a decimal, change the divisor to a whole number by moving the decimal point. Move the decimal point in the dividend the same number of places. Then divide.

Remember, write a decimal point in the quotient directly above the new decimal point position in the dividend.

Find: 4.34 ÷ 0.7

Move each decimal point 1 place.

$$0.7\overline{)4.34}$$

Divide.

$$\begin{array}{r} 6.2 \\ 7\overline{)43.4} \\ \underline{42}\downarrow \\ 14 \\ \underline{14} \\ 0 \end{array}$$

Find: 0.0713 ÷ 0.23

Move each decimal point 2 places.

$$0.23\overline{)0.0713}$$

Divide.

$$\begin{array}{r} 0.31 \\ 23\overline{)007.13} \\ \underline{69}\downarrow \\ 23 \\ \underline{23} \\ 0 \end{array}$$

Divide.

1\.

$$\begin{array}{r} 4.8 \\ 1.7\overline{)8.16} \\ \underline{68}\downarrow \\ 136 \\ \underline{136} \\ 0 \end{array}$$

$0.5\overline{)2.645}$ $\qquad$ $4.6\overline{)0.0138}$ $\qquad$ $3.9\overline{)\$53.43}$

2\.

$$\begin{array}{r} 29.9 \\ 0.16\overline{)4.784} \\ \underline{32}\downarrow \\ 158 \\ \underline{144} \\ 144 \\ \underline{144} \\ 0 \end{array}$$

$0.24\overline{)1.488}$ $\qquad$ $0.08\overline{)\$6.48}$ $\qquad$ $0.57\overline{)2.565}$

Set up the problem. Then divide.

3. 1.854 ÷ 0.9 = ________ $\qquad$ 0.91 ÷ 1.3 = ________ $\qquad$ \$15.18 ÷ 0.33 = ________

$0.9\overline{)1.854}$

Checking Up

Multiply.

1. $\begin{array}{r} 0.7 \\ \times\ 0.6 \\ \hline \end{array}$ $\begin{array}{r} 0.7 \\ \times\ \ 6 \\ \hline \end{array}$ $\begin{array}{r} 1 \\ \times\ 0.1 \\ \hline \end{array}$ $\begin{array}{r} 1.5 \\ \times\ \ 3 \\ \hline \end{array}$ $\begin{array}{r} 1.5 \\ \times\ 0.3 \\ \hline \end{array}$ $\begin{array}{r} 0.15 \\ \times\ \ 0.3 \\ \hline \end{array}$ $\begin{array}{r} 32 \\ \times\ 2.4 \\ \hline \end{array}$ $\begin{array}{r} 0.12 \\ \times\ 0.12 \\ \hline \end{array}$

2. $\begin{array}{r} 1.25 \\ \times\ \ 30 \\ \hline \end{array}$ $\begin{array}{r} 0.015 \\ \times\ \ 0.14 \\ \hline \end{array}$ $\begin{array}{r} 0.075 \\ \times\ \ 0.22 \\ \hline \end{array}$ $\begin{array}{r} 15.5 \\ \times\ 2.12 \\ \hline \end{array}$ $\begin{array}{r} 705 \\ \times\ 2.04 \\ \hline \end{array}$

3. 2.25 × 10 = ____________ 0.225 × 1,000 = ____________ 22.5 × 100 = ____________

Change the fractions to decimals and multiply.

4. $0.056 \times 2\frac{1}{2} =$ $2.25 \times \frac{1}{4} =$ $18.9 \times 1\frac{1}{10} =$

______ × ______ = ______ ______ × ______ = ______ ______ × ______ = ______

Divide. Round any repeating decimals to the nearest hundredth.

5. $4\overline{)2.4}$ $24\overline{)0.96}$ $25\overline{)0.075}$ $0.4\overline{)24}$ $0.16\overline{)3}$

6. $0.18\overline{)9}$ $3.2\overline{)96}$ $0.2\overline{)3.2}$ $0.15\overline{)4.5}$ $0.24\overline{)0.9}$

7. $1.8\overline{)0.9}$ $11\overline{)5}$ $8\overline{)7}$ $16\overline{)5}$ $9\overline{)}$

8. 35.2 ÷ 10 = ____________ 18.6 ÷ 100 = ____________ 36 ÷ 1,000 = ____________

Change each fraction to its decimal equivalent.

9. $\frac{4}{5}$ = ____________ $\frac{1}{3}$ = ____________

Estimate each answer.

10. 56.8 × 11.3 40.16 ÷ 7.95

Making Sure of Fractions—Division

Divide. Simplify.

1. $\frac{1}{4} \div \frac{1}{8} =$ $\quad$ $\frac{3}{5} \div \frac{1}{5} =$ $\quad$ $\frac{1}{3} \div \frac{1}{2} =$

2. $\frac{1}{2} \div \frac{1}{4} =$ $\quad$ $\frac{2}{9} \div \frac{7}{12} =$ $\quad$ $\frac{1}{3} \div \frac{3}{5} =$

3. $4 \div \frac{1}{2} =$ $\quad$ $8 \div \frac{4}{5} =$ $\quad$ $10 \div \frac{5}{6} =$

4. $12 \div \frac{3}{4} =$ $\quad$ $3 \div \frac{1}{2} =$ $\quad$ $\frac{1}{3} \div 9 =$

5. $5\frac{2}{3} \div 3 =$ $\quad$ $2\frac{1}{4} \div 6 =$ $\quad$ $8\frac{1}{2} \div 4 =$

6. $9\frac{7}{9} \div \frac{5}{6} =$ $\quad$ $6\frac{2}{3} \div \frac{1}{4} =$ $\quad$ $8\frac{2}{3} \div \frac{1}{3} =$

7. $5\frac{1}{2} \div \frac{1}{2} =$ $\quad$ $6\frac{2}{3} \div \frac{1}{5} =$ $\quad$ $1\frac{3}{8} \div \frac{2}{3} =$

8. $6\frac{4}{5} \div 1\frac{1}{5} =$ $\quad$ $12\frac{1}{3} \div 6\frac{3}{4} =$ $\quad$ $6\frac{2}{5} \div 5\frac{1}{3} =$

9. $7\frac{1}{2} \div 4\frac{3}{5} =$ $\quad$ $2\frac{1}{2} \div 1\frac{1}{3} =$ $\quad$ $2\frac{1}{4} \div 2\frac{1}{2} =$

Solve.

Do Your Work Here

10. Yolanda wants to make scarves from $\frac{3}{4}$ yard of silk. If she needs $\frac{1}{8}$ yard for each scarf, how many scarves can she make? ________

11. Raul ordered 7 pizzas for his party. Each person at the party was given $\frac{1}{3}$ of a pizza. If no pizza was left over, how many people attended Raul's party? ________

Making Sure of Decimals

Write these decimals in words.

1. 0.5 ______ 7.1 ______ 9.035 ______

Write each of these as decimals.

2. three tenths ______ fifty hundredths ______

3. fifteen ten-thousandths ______ fifteen thousandths ______

Write these decimal numbers, using the decimal point for "and."

4. five and five tenths ______ five and five hundredths ______

5. five and five thousandths ______ five and five ten-thousandths ______

6. fourteen hundred ninety-two and fourteen hundred ninety-two ten-thousandths ______

Change these fractions to decimals.

7. $\frac{1}{10}$ = ______ $\frac{1}{2}$ = ______ $\frac{1}{4}$ = ______ $\frac{3}{4}$ = ______ $\frac{3}{10}$ = ______ $\frac{7}{10}$ = ______

Change these decimals to fractions in lowest terms.

8. 0.1 = ____ 0.5 = ____ 0.50 = ____ 0.8 = ____ 0.75 = ____ 0.25 = ____

Change these decimals to mixed numbers in lowest terms.

9. 1.5 = ____ 2.25 = ____ 3.75 = ____ 4.1 = ____ 7.50 = ____ 9.3 = ____

Change these mixed numbers to decimals.

10. $1\frac{1}{2}$ = ____ $2\frac{1}{4}$ = ____ $3\frac{3}{4}$ = ____ $7\frac{1}{10}$ = ____ $4\frac{3}{10}$ = ____ $2\frac{2}{5}$ = ____

Draw a circle around the pairs that are equal.

11. 300 and 0.03 0.4 and $\frac{4}{10}$ 0.5 and .50 0.07 and $\frac{7}{10}$ 42 and 4.2

12. 150 and 0.150 210 and 2.10 35 and 30.5 0.25 and $\frac{1}{4}$ 0.5 and $\frac{1}{2}$

Draw a circle around the larger decimal in each pair.

13. 0.05 and 0.005 0.25 and 0.3 0.078 and 0.8 0.4 and 0.004 0.45 and 0.456

14. 1.5 and 1.15 4 and 0.45 0.017 and 1.7 2.5 and 2.25 3.08 and 3.1

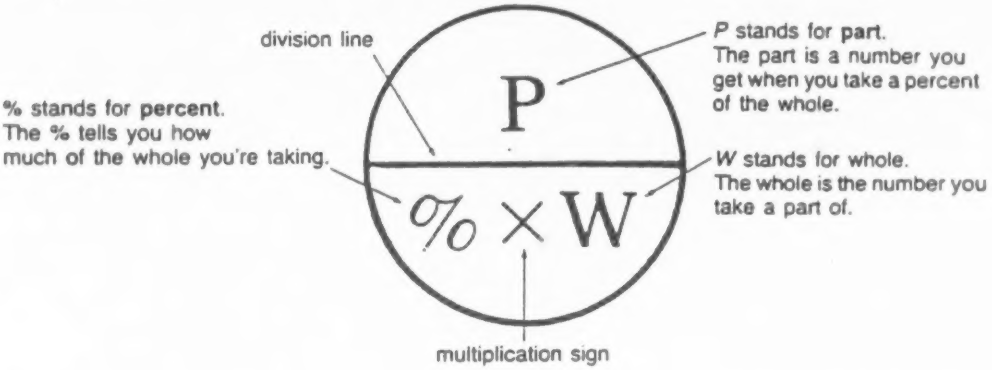
Solve. **Do Your Work Here**

15. Henry earns $865.40 each week. How much does he earn in 16 weeks? ______

16. Maureen earned $64.75 for 3.5 hours of work. How much does she earn per hour? ______

Using the Percent Circle

Now that you have practiced finding the part, the whole, and the percent with the "of" formula, try mixing them up. To make it easier to decide whether to multiply (to find the part) or divide (to find the whole or the percent), you can use a helpful tool called the percent circle:



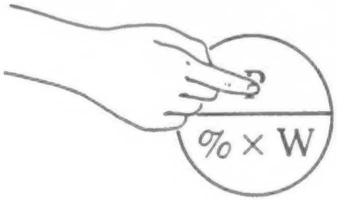
% stands for **percent**. The % tells you how much of the whole you're taking.

P stands for **part**. The part is a number you get when you take a percent of the whole.

W stands for whole. The whole is the number you take a part of.

These three problems show you how you can use the percent circle to find a percent, part, or whole.

1. To find a **part** of the whole:
   If 20% of the people in a city are Hispanic and there are 200,000 people in the city, how many of them are Hispanic?



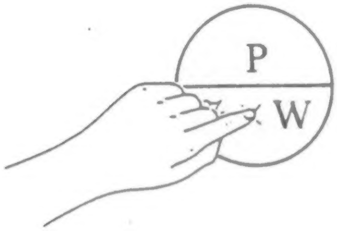
Cover the *P* (part), the number you are trying to find. That leaves you with a multiplication problem:

$P = \% \times W$

$P = 20\% \times 200{,}000$

$P = .20 \times 200{,}000 =$ **40,000 people**

2. To find the **percent**:
   Mr. Park was told that he needed a down payment of $2,100 to buy his $14,000 car. What percent did he have to put down?



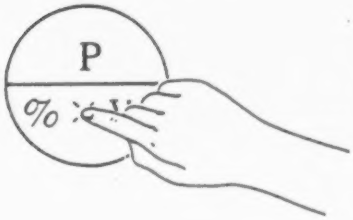
Cover the % (percent), the number you are trying to find. That leaves you with a division problem:

$\% = P \div W$

$$\% = \frac{\$2{,}100}{\$14{,}000} = \frac{3}{20} = \mathbf{15\%}$$

Karen Scott Digilio, Critical Thinking With Math: Reasoning and Problem Solving (Chicago: Contemporary Books, Inc., 1989), pp. 98-99.

3. To find the **whole**:
Tuition at Scott Community College went up 20%, for an increase of $10 per credit hour. What was the tuition previously?



Cover the *W* (whole), the number you are trying to find. That leaves you with a division problem:

$W = P \div \%$

$W = \frac{\$10}{.20} =$ **$50 per credit hour**

HINT: Don't be confused that your answer, $50, is more than the $10 given in the problem. The $10 is just the part (how much the tuition increased) from the old tuition.

▶ Now use the percent circle to solve each of the problems below. First decide whether you are looking for the percent, the part, or the whole.

1. The population of Hometown is now 8,000 people. In 1940 it was 4,000 people. What percent of today's population was the 1940 population?

2. Mrs. Murray's annual salary of $19,000 will soon increase by 8.5%. By how many dollars will her salary increase?

3. Of the shipment of 1,100 stalks of bananas, 15% was damaged en route. How many stalks were damaged?

4. If the Rogers family paid $107.10 in taxes on a used car and the tax rate is 7%, what did the family pay for the car?

5. The owner of a pawnshop sold a bracelet for 350% of what he paid for it. If he sold it for $182, how much did he pay for it?

6. A family drove all day but covered only 25% of its journey. They had traveled 475 miles that day. How long will their journey be?

7. Adrian had to pay $6.75 sales tax on his purchase of $125. What tax rate did he have to pay?

Interchanging Percent and Decimals

To change a *percent to a decimal,* move the decimal point 2 places to the left and drop the % sign.

Remember, when there is no decimal point in a number, it is understood to be at the right of the number. A zero by itself to the *left* of a decimal point is a placeholder (as in 0.6 or 0.02).

EXAMPLES

$64\frac{1}{2}\% = 64.5\% = 0.645$ $7\% = 07\% = 0.07$ $28\% = 0.28$

Change each of these percents to decimals.

1. 20% = *0.20* 15% = 10% = 25% = 50% = 75% =

2. 30% = 40% = 12% = 18% = 22% = 27% =

3. 14.5% = *0.145* 17.6% = 60.1% = $33\frac{1}{2}\%$ = $45\frac{1}{4}\%$ = $35\frac{2}{5}\%$ =

4. 90% = 80% = 70% = 65% = 95% = 100% =

1% = *0.01* 7% = 5% = 9% = 8% = 3% =

To change a *decimal to a percent,* move the decimal point 2 places to the right and write a percent symbol. Write zeros as needed.

EXAMPLES

$0.825 = 82.5\%$ or $82\frac{1}{2}\%$ $0.03 = 3\%$ $0.4 = 0.40 = 40\%$

Change the following decimals to percents.

6. 0.10 = *10%* 0.20 = 0.30 = 0.40 = 0.50 = 0.60 =

7. 0.15 = 0.25 = 0.35 = 0.45 = 0.65 = 0.75 =

8. 0.12 = 0.27 = 0.43 = 0.67 = 0.90 = 1.00 =

9. 0.01 = *1%* 0.05 = 0.09 = 0.07 = 0.03 = 0.08 =

10. 0.1 = 0.2 = 0.3 = 0.7 = 0.9 = 0.5 =

0.125 = *12.5% or $12\frac{1}{2}\%$* 0.375 = 0.625 = 0.875 = 0.085 = 0.015 =

James T. Shea, Basic Essentials of Mathematics: Book Two (Texas: Steck-Vaughn Co., 1991), pp. 6-8.

Changing Fractions to Percent

Any fraction can be written as a percent. To do so, follow these steps.

(1) Change the fraction to its decimal equivalent by dividing the numerator by the denominator.
(2) Move the decimal point two places to the right.
(3) Place the percent sign to the right of the number.

Change $\frac{1}{5}$ to a percent.

$0.20 = 20\%$
$5\overline{)1.00}$

Change $\frac{3}{10}$ to a percent.

$0.30 = 30\%$
$10\overline{)3.00}$

1. $\frac{1}{2} =$ $\frac{1}{4} =$ $\frac{3}{4} =$ $\frac{1}{5} =$ $\frac{2}{5} =$

2. $\frac{3}{5} =$ $\frac{4}{5} =$ $\frac{3}{10} =$ $\frac{7}{10} =$ $\frac{9}{10} =$

Fractions of halves, fourths, fifths, tenths, and the like, as you have just seen, produce **even** two-place decimals. Other fractions (like eighths, twelfths, and sixteenths) can be changed to decimals if the division is carried out more than two places.

Change $\frac{1}{8}$ to a percent.

$0.125 = 12.5\%$ or $12\frac{1}{2}\%$
$8\overline{)1.000}$

Change $\frac{3}{16}$ to a percent.

$0.1875 = 18.75\%$ or $18\frac{3}{4}\%$
$16\overline{)3.0000}$

Change the following fractions to percents.

3. $\frac{3}{8} =$ $\frac{5}{8} =$ $\frac{7}{8} =$ $\frac{1}{32} =$ $\frac{5}{32} =$

4. $\frac{1}{16} =$ $\frac{3}{16} =$ $\frac{5}{16} =$ $\frac{7}{16} =$ $\frac{11}{16} =$

When some fractions are changed to decimals, there are always remainders, no matter how many places we carry out the division. In such cases, three, or sometimes four, places is far enough to carry the division. Then the remainder is expressed as a fraction.

Solve the following problems.

5. Change $\frac{1}{3}$ to a percent:

$0.3333\frac{1}{3} = 33\frac{1}{3}\%$
$3\overline{)1.0000}$

Change $\frac{1}{9}$ to a percent:

Change $\frac{2}{3}$ to a percent:

Fractions, Decimals, and Percents

All percents can be changed to fractions. Many percents can be changed to very simple fractions. In many cases it is easier to use a simple fraction than to use a decimal. To change a percent to a fraction, place the percent over 100 and drop the % sign. Simplify.

Fill in the missing equivalent forms.

Do Your Work Here

	FRACTION	DECIMAL	PERCENT
1.	$\frac{1}{2}$	*0.50*	50%
2.	$\frac{1}{4}$		
3.			75%
4.		0.40	
5.			60%
6.	$\frac{1}{10}$		
7.			70%
8.		0.25	
9.	$\frac{3}{10}$		
10.		0.625	
11.			45%
12.	$\frac{3}{20}$		
13.			72%
14.	$\frac{7}{50}$		
15.	$\frac{1}{25}$		
16.		0.05	
17.			15%
18.		0.20	
19.	$\frac{1}{8}$		
20.		0.375	
21.			$33\frac{1}{3}\%$
22.	$\frac{2}{3}$		
23.		0.80	
24.	$\frac{1}{12}$		
25.			$62\frac{1}{2}\%$
26.			$87\frac{1}{2}\%$
27.	$\frac{4}{5}$		
28.		0.90	
29.	$\frac{7}{10}$		

$50\% = 0.50 = \frac{50}{100} = \frac{1}{2}$

Using the "Of" Formula with Percents

Remember the "of" formula we used with fractions? The same formula can be applied to percents.

Let's try translating some problems using the "of" formula. Look at the problem below.

> Wanda, a waitress, gets a tip of 15% of the bill before tax. If the Labelles' bill came to $28.33 *before* tax, how much of a tip did they leave for Wanda?

QUESTION:	A percent of	the whole	equals what part?
EXPRESSION:	15% ×	$28.33	= $\boxed{?}$
SOLUTION:	.15 ×	$28.33	= $4.25

To find the part, just multiply.

► In the following problems, write the arithmetic expression for the questions and then solve.

1. Illinois has a 6.5% sales tax. If Beverly's purchases totaled $132.76, how much sales tax did she have to pay?

   QUESTION: A percent of the whole equals what part?

   EXPRESSION:

   SOLUTION:

2. Only 40% of the 3,905 registered voters in one town cast ballots in the last election. How many voted?

   QUESTION: A percent of the whole equals what part?

   EXPRESSION:

   SOLUTION:

Karen Scott Digilio, Critical Thinking With Math: Reasoning and Problem Solving (New York: Contemporary Books, Inc., 1989), pp. 95-97.

3. Juan must get 75% correct on all his tests to earn a C. If the number of questions totals 300, how many will he have to get right to earn a C?

   QUESTION: A percent of the whole equals what part?

   EXPRESSION:

   SOLUTION:

Now let's look at some problems that follow a pattern in which the whole is not given. Look at the example below.

> Government workers were given a 3.2% raise. This gave Sung Won $38.40 more per month. How much was her monthly salary before the raise?
>
> QUESTION: $\underbrace{\text{A percent}}\ \underbrace{\text{of the whole}}\ \underbrace{\text{equals what part}}$?
>
> EXPRESSION: $3.2\% \times \boxed{?} = \$38.40$ raise
>
> SOLUTION: $\boxed{?} = \$38.40 \div .032$
>
> $\boxed{?} = \mathbf{\$1{,}200}$

Since the unknown whole (her salary) is part of the multiplication equation, you must divide to find it.

▶ In the following problems, write the arithmetic expressions for the questions and then solve.

4. Minneapolis got 12% more snow this year than last. The city got 10.08 more inches this year. How much snow did Minneapolis get last year?

   QUESTION: A percent of the whole equals what part?

   EXPRESSION:

   SOLUTION:

5. Dinette sets were advertised at a store for 30% off the regular price. The Colonnas will save $300 on the set they have been eyeing. How much is the regular price?

   QUESTION: A percent of the whole equals what part?

   EXPRESSION:

   SOLUTION:

6. If home prices are 150% of what they were two years ago and the price of one house is now $120,000, what was its price two years ago?

   QUESTION: A percent of the whole equals what part?

   EXPRESSION:

   SOLUTION:

Now let's look at a third and final pattern in which the percent itself is not given. Look at the example below.

> A taxi driver is given a $.60 tip on a $4.00 fare. What was the percent of the tip?
>
> QUESTION: $\underbrace{\text{A percent of}}\ \underbrace{\text{the whole}}\ \underbrace{\text{equals what part?}}$
>
> EXPRESSION: $\boxed{?} \times \quad \$4 \quad = \$.60$
>
> SOLUTION: $\boxed{?} = \$.60 \div 4 = .15 = \mathbf{15\%}$

Since the unknown is part of the multiplication expression, you divide.

▶ In the following problems, write the arithmetic expressions for the questions and then solve.

7. If a family's combined income is $585 a week and it spends $100 a week on food, what percent of its income is spent on food?

   QUESTION: A percent of the whole equals what part?

   EXPRESSION:

   SOLUTION:

8. A store advertises a sale of $7 off on all men's shirts. What is the percent of savings on a $21 shirt at that store?

   QUESTION: A percent of the whole equals what part?

   EXPRESSION:

   SOLUTION:

Finding a Percent of a Number

To find a percent of a number, write a percent sentence. Every percent sentence consists of three numbers: the rate, the whole, and the part.

$$\underset{\text{rate}}{20\%} \text{ of } \underset{\text{whole}}{48} = \underset{\textbf{part}}{\mathbf{9.6}}$$

If the *part* is missing in a percent problem, solve by first changing the *rate* to a decimal. Then multiply the rate by the *whole*.

Remember, "of" means multiply.

Find: 25% of 84

25% × 84 = ?
25% = 0.25
0.25 × 84 = 21

$$\begin{array}{r} 84 \\ \times\,0.25 \\ \hline 420 \\ 1680 \\ \hline 21.00 \end{array}$$

Find: 105% of 280

105% × 280 = ?
105% = 1.05
1.05 × 280 = 294

$$\begin{array}{r} 280 \\ \times\,1.05 \\ \hline 1400 \\ 0000 \\ 28000 \\ \hline 294.00 \end{array}$$

Change each percent to a decimal. Solve.

1.	50% of 90 *0.5 × 90 = 45*	300% of 60	50% of 60	75% of 120	35% of 60
2.	80% of 120	75% of 80	10% of 180	20% of 60	25% of 45
3.	40% of 75	90% of 200	25% of 80	21% of 200	60% of 160
4.	250% of 100	99% of 55	25% of 400	40% of 150	14% of 500
5.	8% of 900	35% of 700	90% of 640	75% of 400	30% of 120
6.	36% of 125	5% of 860	15% of 450	45% of 40	10% of 90
7.	15% of 260	25% of 600	125% of 80	225% of 12	5% of 843

James T. Shea, Basic Essentials of Mathematics: Book Two (Texas: Steck-Vaughn Co., 1991), pp. 12-14, 106.

Problems Using Percents

Use percent to solve these word problems.

1. A real estate agent sold our house to Ira Brown for $65,000. For her service in making the sale, the agent charged 5% of the sale price. How much did we have to pay the agent?

Answer ____________________

2. Thomas says that he spends 25% of his salary for rent. If his annual salary is $24,000, how much total rent does he pay each year?

Answer ____________________

3. Thomas said that 30% of his earnings was spent for food. How much money does he spend in one year for food?

Answer ____________________

4. He also said that he spent 15% of his salary for clothing for the family. How much did he spend last year for clothing?

Answer ____________________

5. For insurance and savings Thomas said that he had set aside 20% of his salary. How much did he set aside last year?

Answer ____________________

6. Thomas also said that doctors, hospitals, medicine, and medical costs took 8% of his salary. How much was spent for these?

Answer ____________________

7. The Shamrock Motor Sales Co. sells 40% of all the cars sold in the town of Polanco. Last year 500 cars were sold in the town. How many were sold by the Shamrock Co.?

Answer ____________________

8. A bushel of potatoes weighs 60 pounds. It is said that 50% of this weight is made up by the water in potatoes. How many pounds of water are there in a bushel of potatoes?

Answer ____________________

9. A gallon of milk weighs (on the average) 8.6 pounds. Of this amount 75% is water. In the average gallon of milk, how much does the water weigh?

Answer ____________________

10. Butterfat makes up 4% of the milk. How many pounds of butterfat are there in the average gallon of milk?

Answer ____________________

Finding a Percent of a Number Using Fractions

Another way to find a percent of a number is to change the *percent* to a fraction. You must also change the *whole* to a fraction. Then multiply. Often it is easier to multiply by a fraction than by a decimal.

Remember, to change a percent to a fraction:
- Write the percent as a decimal.
- Drop the decimal point and place the number over 100.
- Simplify.

Find: 20% of 50

$20\% \times 50 = ?$

$20\% = 0.20 = \frac{20}{100} = \frac{1}{5}$

$\frac{1}{\cancel{5}_{1}} \times \frac{\cancel{50}^{10}}{1} = \frac{10}{1} = 10$

Find: 75% of $1\frac{3}{4}$

$75\% \times 1\frac{3}{4} = ?$

$75\% = 0.75 = \frac{75}{100} = \frac{3}{4}$

$\frac{3}{4} \times \frac{7}{4} = \frac{21}{16} = 1\frac{5}{16}$

Change each percent to a fraction. Solve.

1. 25% of 16 $25\% = 0.25 = \frac{25}{100} = \frac{1}{4}$ $\frac{1}{\cancel{4}_{1}} \times \frac{\cancel{16}^{4}}{1} = \frac{4}{1} = 4$	50% of $1\frac{1}{3}$	5% of 60
2. 85% of 40	40% of $3\frac{1}{3}$	10% of 90
3. 60% of 55	80% of $3\frac{3}{4}$	15% of 80
4. 6% of 20	70% of $6\frac{2}{3}$	30% of 50
5. 75% of $4\frac{1}{2}$	50% of 16	20% of 25
6. 90% of $2\frac{1}{2}$	35% of 40	8% of 35
7. 18% of 50	45% of 80	85% of $3\frac{1}{2}$

Unit 4 Review

Making Sure of Percent

Change to percent.

1. 0.17 = 0.10 = $\frac{1}{4}$ = 0.625 = 0.375 = 1.5 = 0.01 =

Change to decimals.

2. 15% = 0.1% = 25% = 20% = $12\frac{1}{2}\%$ = 1% = 125% =

Write each percent as a decimal and as a fraction.

3. 5% = __________ __________ 47% = __________ __________

Find each number.

4. 20% of 25 30% of what number is 27? What percent of 80 is 12?

Solve these word problems.

5. Elizabeth bought an $18 shirt at a 25%-off sale. How much did she save?

Answer __________

6. Mrs. White bought a $90 radio at 15% off. How much did she save?

Answer __________

7. A store advertised all its goods at 20% off. Diane Barker bought a radio (marked $144) and a hair dryer (marked $18.95). How much did she pay?

Answer __________

8. If we pay our electric bill by the tenth of the month, we can save 5%. If our bill is $60, how much should we pay after the discount?

Answer __________

9. David Thaxton's monthly salary is $1,000 plus 8% commission on his total sales. Last month David sold $16,388. What was his salary?

Answer __________

10. An airline is running an excursion at 25% savings. The regular fare is $60.80. How much less is the excursion fare?

Answer __________

11. A store gets a discount of 5% for cash payment. How much will the store save by paying cash for a purchase of $18,650?

Answer __________

12. The doctor has offered to settle all old accounts at 25% off. She collected $1,590. What was the total of the original accounts?

Answer __________

13. At a sale a $975 piano was purchased for $585. What percent of the original amount was this?

Answer __________

CHAPTER 11:
Word Problem Review

For all problems, choose the best answer.

1. 3 tablespoons cocoa plus 1 tablespoon fat can be substituted for 1 ounce chocolate in baking recipes. A recipe for chocolate cake calls for 12 ounces of chocolate. If Shirley is substituting cocoa for chocolate, how much cocoa should she use?

   a. *15 tablespoons*
   b. *9 tablespoons*
   c. *4 tablespoons*
   d. *36 tablespoons*
   e. *17 tablespoons*

2. 1 cup sugar plus $\frac{1}{4}$ cup liquid can be substituted for 1 cup corn syrup in baking recipes. A recipe calls for $1\frac{1}{2}$ cups corn syrup. If Mira is substituting sugar for corn syrup, how much liquid should she add?

   a. $\frac{3}{8}$ *cup*
   b. $\frac{1}{6}$ *cup*
   c. *6 cups*
   d. $1\frac{1}{4}$ *cups*
   e. $3\frac{3}{4}$ *cups*

3. Matt has a 400-square-inch board. He needs a 25-square-inch piece of the board for the floor of a birdhouse. What percent of the board will he need for the birdhouse?

   a. *425 square inches*
   b. *375 square inches*
   c. $6\frac{1}{4}\%$
   d. $93\frac{3}{4}\%$
   e. *100%*

4. A bushel of apples weighs 48 pounds. Tanya wants to buy 12 pounds of apples. How many bushels should she buy?

   a. *4 bushels*
   b. *36 bushels*
   c. $\frac{1}{2}$ *bushel*
   d. $\frac{1}{4}$ *bushel*
   e. *none of the above*

Kenneth Tamarkin, Number Power 6: Word Problems (Chicago: Contemporary Books, Inc., 1983), pp. 132-142.

5. 1.23 cubic yards of concrete are needed to cover 100 square feet with 4 inches of concrete. How many cubic yards are needed to cover 550 square feet with 4 inches of concrete?

   a. *650 square feet*
   b. *4.92 cubic yards*
   c. *6.765 cubic yards*
   d. *2,200 square inches*
   e. *27.06 cubic yards*

6. Large eggs weigh $1\frac{1}{2}$ pounds per dozen. Dawn bought 8 large eggs. How much did the eggs weigh?

   a. *3 ounces*
   b. $\frac{1}{3}$ *pound*
   c. *1 pound*
   d. *18 ounces*
   e. *none of the above*

7. Melvin received an electric bill for $86.29. He knows that it cost him $59 a month for his air conditioning. How much would his bill have been if he had not operated the air conditioner?

   a. *$155.29*
   b. *$27.29*
   c. *$50.91*
   d. *$14.63*
   e. *none of the above*

8. If Kenneth retires at age 65, he will receive as a pension 80% of his salary of $18,657. If he retires at age 62, he will receive only 70% of his salary. How much smaller will his pension be if he retires early?

   a. *$1,865.70*
   b. *$10*
   c. *$18,507*
   d. *$3,331.41*
   e. *$13,059.90*

9. An oil truck carried 9,008 gallons of oil. After making 7 deliveries averaging 364 gallons each, how much oil was left in the truck?

   a. *174 gallons*
   b. *9,379 gallons*
   c. *8,644 gallons*
   d. *6,460 gallons*
   e. *8,637 gallons*

10. A conservation organization charged each member $10 dues plus $5 for their magazine. How much money did the organization collect from its 13,819 members?

a. *$207,285*
b. *$138,190*
c. *$69,095*
d. *$690,950*
e. *$138,195*

11. For her wardrobe, Mrs. Are was given a Paris original worth $1,343, a New York original worth $658, and a Goodwill original worth $3.98. What was the total value of the clothes given to her?

a. *$2,004.98*
b. *$668*
c. *$1,997.02*
d. *$681.02*
e. *$1,346.98*

12. After 3 years, Elsie's car had lost $\frac{1}{3}$ of its original value. Two years later, it had lost an additional $\frac{1}{4}$ of its original value. If she bought the car for $3,600, what was it worth after the five years?

a. *$4,800*
b. *$2,700*
c. *$3,300*
d *$2,100*
e. *$1,500*

13. Glenn, the owner of a hardware store, originally paid $540.60 for 15 tool sets. At his year-end clearance sale, he sold the last tool set for $24. How much money did he lose on the last tool set?

a. *$180.60*
b. *$1.50*
c. *$12.04*
d. *$36.04*
e. *none of the above*

14. After having $48.23 taken out of his paycheck, Maurice takes home $132.77 every week. What are Maurice's total gross earnings for a 52-week year?

a. *$4,396.08*
b. *$9,412*
c. *$8,814.90*
d. *$6,904.04*
e. *$2,507.96*

15. Peter's allergy pills come in a 250-tablet bottle. He takes 4 tablets a day. How many tablets did he have left after taking the tablets for 30 days?

a. *130 tablets*
b. *216 tablets*
c. *120 tablets*
d. *370 tablets*
e. *none of the above*

16. Money available for financial aid at Santa Clara Community College has dropped $462,000 from last year's $1,126,200. The college decided to divide the aid evenly among 820 students who needed the money. How much did each student get in financial aid?

a *$563.41*
b. *$810*
c. *$1,373.41*
d. *$1,936.82*
e. *none of the above*

17. Nickilena, Jean, Rosemary, and Elaine went into business together. The 4-woman partnership earned $36,460 and had expenses of $23,188. If they split the profits evenly, how much did each woman make?

a. *$5,797*
b. *$3,318*
c. *$14,912*
d. *$9,115*
e. *$14,073*

18. After driving 168 miles, Tony needed 5.6 gallons of gasoline to fill his gas tank. How many gallons of gasoline would he use for the 417-mile drive from his home in Los Angeles to his brother's home near San Francisco?

a. *44.5 gallons*
b. *13.9 gallons*
c. *74.5 gallons*
d. *8.3 gallons*
e. *19.5 gallons*

19. Diana makes lemonade from the powdered concentrate by combining 5 tablespoons of concentrate with 2 cups of water. The directions say you should use 24 cups of water for the entire container of concentrate. How many tablespoons of concentrate are in the container?

a. *240 tablespoons*
b. *130 tablespoons*
c. *110 tablespoons*
d. *60 tablespoons*
e. *31 tablespoons*

20. A pile of books weighed 34.2 pounds. If each book weighed .6 pound, how many books were in the pile?

a. *35 books*
b. *34 books*
c. *21 books*
d. *20 books*
e. *57 books*

21. There are 5,372 school age children in town. 1,547 either go to private school or have dropped out. How many children remain in the town's public schools?

a. *6,919 children*
b. *3,825 children*
c. *4,235 children*
d. *4,839 children*
e. *none of the above*

22. 423 service stations in the state closed in the last year. Only 2,135 remain. How many service stations were there in the state a year ago?

a. *2,558 service stations*
b. *1,712 service stations*
c. *2,312 service stations*
d. *2,512 service stations*
e. *none of the above*

23. There are 3 feet in a yard. There are 1,760 yards in a mile. How many feet are there in a 5 mile race?

a. *15 feet*
b. *2,935$\frac{2}{3}$ feet*
c. *26,400 feet*
d. *8,800 feet*
e. *5,280 feet*

24. Manny was working as a hot dog vendor. He sold a total of 426 hot dogs in one weekend. If he sold 198 on Saturday, how many did he sell on Sunday?

a. *624 hot dogs*
b. *332 hot dogs*
c. *228 hot dogs*
d. *514 hot dogs*
e. *none of the above*

25. During the Washington's Birthday Clearance Sale, Gayle bought a $96 winter coat that was reduced by $\frac{1}{3}$. What was the sale price of the coat?

a. *$32*
b. *$64*
c. *$288*
d. *$93*
e. *none of the above*

26. During the sale, Naisuon bought a three-piece wool suit that was reduced by $47 to $95. What was the original price of the suit?

a. *$48*
b. *$52*
c. *$132*
d. *$142*
e. *none of the above*

27. Naomi had $61 in her checking account. She wrote a check for $28 and made a $115 deposit. How much money did she then have in the account?

a. *$204*
b. *$24*
c. *$148*
d *$82*
e. *$34*

28. Maureen weighed $172\frac{1}{2}$ pounds. She lost $47\frac{3}{4}$ pounds in one year. What was her new weight?

a. *$219\frac{1}{4}$ pounds*
b. *$118\frac{3}{4}$ pounds*
c. *$124\frac{3}{4}$ pounds*
d. *$125\frac{1}{4}$ pounds*
e. *none of the above*

29. Carla gained 3 pounds in the first month of her new diet and 4 pounds in the second month. Her original weight was 104 pounds. What was her new weight?

a. *97 pounds*
b. *105 pounds*
c. *103 pounds*
d. *111 pounds*
e. *100 pounds*

30. Out of 1,400 people polled, 68% were in favor of a nuclear arms freeze and 25% were against it. How many people were undecided?

a. *93 people*
b. *350 people*
c. *952 people*
d. *98 people*
e. *1,307 people*

31. Glennie had $74.81 in her checking account. She wrote checks for $46.19 and $22.45. She then made a $60.00 deposit. What was her new balance?

a. *$203.45*
b. *$66.17*
c. *$83.45*
d. *$53.83*
e. *$38.55*

32. Eileen bought 3 pairs of socks for $1.79 each and 4 towels for $2.69 each. How much did she spend?

    a. *$4.48*
    b. *$11.48*
    c. *$31.36*
    d. *$16.13*
    e. *$7.00*

33. After paying $14.43 for dinner and $3.50 for a movie, Florence paid the babysitter $5. How much did the evening cost her?

    a. *$12.93*
    b. *$22.93*
    c. *$5.93*
    d. *$8.50*
    e. *$19.43*

34. On the average, Kennedy Airport has 96 jumbo jets arriving each day. Each jumbo jet has an average of 214 passengers. How many passengers arrive by jumbo jet at Kennedy Airport each day?

    a. *310 passengers*
    b. *20,544 passengers*
    c. *118 passengers*
    d. *222 passengers*
    e. *none of the above*

35. The list price of an automobile was $6,578. Jane ordered $435 of added options and received a $650 rebate. How much did Jane pay for the car?

    a. *$7,663*
    b. *$7,013*
    c. *$7,228*
    d. *$5,493*
    e. *$6,363*

36. In the first quarter, the Philadelphia 76ers missed only 7 out of 25 field goal attempts. What was their scoring percentage?

    a. *72%*
    b. *76%*
    c. *28%*
    d. *32%*
    e. *18%*

37. 28% of the workers at the factory were women. There were 432 male workers. What was the total number of workers at the factory?

- a. *460 workers*
- b. *12,096 workers*
- c. *600 workers*
- d. *1,543 workers*
- e. *404 workers*

38. 1,600 pounds of steel are used to make a Chevrolet. The automobile plant produced 840 Chevrolets in one day. How many pounds of steel were needed that day to make the cars?

- a. *2,440 pounds*
- b. *1,344,000 pounds*
- c. *760 pounds*
- d. *244,000 pounds*
- e. *none of the above*

39. Sarah bought a carton of 75 nails weighing $\frac{3}{4}$ of a pound. How much did each nail weigh?

- a. *56 pounds*
- b. *100 pounds*
- c. *.01 pound*
- d. $\frac{1}{56}$ *pound*
- e. $\frac{3}{100}$ *pound*

40. Cynthia took 19 girls roller skating. If it cost $.75 for each of the children to get in and $.50 for each of them to rent skates, how much money did Cynthia have to collect?

- a. *$20.25*
- b. *$23.75*
- c. *$17.75*
- d. *$1.25*
- e. *$4.75*

41. Oranges cost $1.50 a dozen. Winsome bought 4 oranges. How much money did she spend?

- a. *$6.00*
- b. *$1.54*
- c. *$1.46*
- d. *$.50*
- e. *$4.50*

42. A $\frac{2}{3}$ majority of those voting in the House of Representatives is needed in order to override a presidential veto. If all 435 representatives vote, how many votes are needed to override a veto?

    a. *290 votes*
    b. *145 votes*
    c. *657 votes*
    d. *658 votes*
    e. *224 votes*

43. East Somerville has 948 homes. 12 people are collecting money for the Heart Association. If they all visit the same number of homes, how many homes should each of them visit?

    a. *960 homes*
    b. *936 homes*
    c. *79 homes*
    d. *11,376 homes*
    e. *none of the above*

44. Carol was told that she would have to pay $684 interest on a $3,600 loan. What interest rate would she have to pay?

    a. *$2,912*
    b. *$4,284*
    c. *19%*
    d. *5.3%*
    e. *81%*

45. Sears is offering 20% off on their $260 refrigerator. How much can you save by buying the refrigerator on sale?

    a. *$52*
    b. *$202*
    c. *$312*
    d. *$104*
    e. *none of the above*

46. A piece of cheese was labeled $1.79 a pound. The price of the cheese was $1.06. How much did the cheese weigh?

    a. *$2.85*
    b. *$.73*
    c. *1.69 pounds*
    d. *1.90 pounds*
    e. *.59 pound*

47. A $1\frac{1}{4}$ pound lobster costs $7.80. How much does it cost per pound?

a. *$9.75*
b. *$6.24*
c. *$6.55*
d. *$9.05*
e. *$1.56*

48. A factory produces $\frac{7}{8}$-ton steel girders. How much steel does it need to produce 600 of these girders?

a. *525 tons*
b. *52.5 tons*
c. *686 tons*
d. *68.6 tons*
e. *none of the above*

49. Steve's Ice Cream Store puts $\frac{1}{16}$ pound of whipped cream on every sundae. For how many sundaes will a 9-pound container of whipped cream last?

a. *25 sundaes*
b. *7 sundaes*
c. *144 sundaes*
d. *26 sundaes*
e. *none of the above*

50. A linoleum tile is $\frac{3}{4}$-foot wide. In order to finish off the room, Ed needs a tile only $\frac{1}{3}$-foot wide. How much did he have to cut off the tile so that it would fit?

a. $\frac{1}{2}$ *foot*
b. $\frac{5}{12}$ *foot*
c. $\frac{4}{7}$ *foot*
d. $\frac{1}{4}$ *foot*
e. $\frac{4}{9}$ *foot*

2. 15
21
23
27
19
+ 15
120

20 people
6) 120
12
0
0

3. $105
92
110
+ 101
$408

$102
4) 408
4
0
0
8
8

4. 4,050
2,106
+ 2,922
9,078

3,026 miles
3) 9,078
9
0
0
7
6
18
18

5. 17
23
24
26
32
34
+ 40
196

28 years
7) 196
14
56
56

The Distance Formula

1. 350
× 4
1,400 **D = 1,400 mi**

2. 35
× 3
105 **D = 105 mi**

3. 4 hrs **T = 4 hrs**
40) 160
160

4. 12 hrs **T = 12 hrs**
35) 420
35
70
70

5. 55 mph **R = 55 mph**
20) 1,100
1 00
100
100

6. 651 mph **R = 651 mph**
3) 1,953
1 8
15
15
3
3

CHAPTER 3: PROBLEM-SOLVING STRATEGIES

Restating the Problem

1. 55, 105, more, factory, end
2. five, quarts, themselves, how many quarts, split, evenly
3. Answers will vary.
4. Answers will vary.
5. c

Working Step by Step pages 28–29

1. 89,977
+ 57,886
147,863

2. 376
× 703
1 128
0 00
263 2
264,328

3. 24,598
− 19,872
4,726

4. 2,030 r9
26) 52,789
52
78
78
9
0
9

5. 12 ÷ 3 = 4 + 5 = **9**

6. 10 + 10 = 20 − 20 = **0**

The Five-Step Model

1. question
2. information
3. operation
4. answer
5. logical
6. **(1)** How many two-inch-high frozen dinners can be stacked into a freezer 36 inches high?
   (2) 36 inches high, 2 inches high
   (3) divide
   (4) **18 dinners**
   2) 36
   (5) It is logical that a freezer can hold 18 two-inch-high frozen dinners.

Karen Scott Digilio, Critical Thinking With Math: Reasoning and Problem Solving (Chicago: Contemporary Books, Inc., 1989) pp. 108-117.

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7. (1) How much will the contestant win after 50 seconds?
(2) $1 for first 10 seconds, doubles every 10 seconds, 50 seconds total time
(3) multiply and add
(4) $1 (*10 sec*) + $2 (*20 sec*) + $4 (*30 sec*) + $8 (*40 sec*) + $16 (*50 sec*) = **$31**
(5) Thirty-one dollars seems a reasonable amount for keeping a feather in the air for 50 seconds.

8. (1) How much prize money was left?
(2) $5,020,000 total prize money; Mears won $804,853; second place $335,103; third place $228,403.
(3) add and subtract
(4)
$$\begin{array}{rl} \$5{,}020{,}000 & \\ \underline{-\ 1{,}368{,}359} & \textit{(total for 1st, 2nd, and 3rd} \\ \mathbf{\$3{,}651{,}641} & \textit{prizes)} \end{array}$$
(5) It is logical that the amount of money remaining is less than the total amount.

Predicting the Question

1. pay for the 5 pounds of coffee
2. How many more people lived in Homeville in 1980 than in 1905? *or* By how many people had Homeville grown?
3. c
4. a
5. b
6. Answers will vary. Sample answer: Central California is how many degrees cooler than southern California?

Seeing the Question

1. 3, 2, 1 Michele used 2 pieces of wood to make a frame. One piece was 27 inches long, and the other was 20 inches long. What was the total length of the wood she used?

2. 1, 3, 2 Jeannette drove across the country for 5 days straight. She covered 400 miles the first day, 375 miles the next, then 390 miles, 560 miles, and finally 580 miles. What was Jeannette's average traveling distance per day?

3. 2, 3, 1 Shipments of cassette tapes come to the Carousel Music Store in boxes of 50. On Monday the store received 13 boxes. How many cassette tapes did the store receive that day?

4. 3, 1, 2 A man traveled 150 miles by car. He drove for 3 hours without stopping. What was his speed?

5. 3, 4, 2, 1 Mr. Johnson found that one tire from a load on his truck weighed 25 pounds. He knew that all the tires weighed the same amount. The tires weighed a total of 12,150 pounds. How many tires were in the load?

6. 2, 4, 1, 3 The teachers at Eagle Prep School are well educated. For each, the average number of years of college education is 5. Each year of college costs about $5,600. What is the amount spent on education by the typical teacher at Eagle Prep?

7. 1, 4, 3, 2 Georgiana bought a piece of material 22 feet long. She used 6 feet to make slacks. She then made dresses out of 12 feet of the material. How much extra material did she buy?

Labeling Information

1. dollars
2. hours
3. ounces
4. gallons

5. Information: 183 students
98 students

Solution:
$$\begin{array}{r} 183 \\ \underline{-\ 98} \\ \mathbf{85} \end{array} \ \boxed{\textbf{students}}$$

6. Information: 410 pages
38 cents or $.38

Solution:
$$\begin{array}{r} 410 \\ \underline{\times\ .38} \\ 3280 \\ \underline{1{,}230} \\ \mathbf{\boxed{\$}155.80} \end{array}$$

7. Information: 720 miles
12 hours

Solution:
$$\begin{array}{r} \mathbf{60}\ \boxed{\textbf{mph}} \\ 12\overline{)720} \\ \underline{72} \\ 0 \\ \underline{0} \end{array}$$

8. Information: 31 pounds
57 pounds

Solution:
$$\begin{array}{r} 57 \\ \underline{-\ 31} \\ \mathbf{26} \end{array} \ \boxed{\textbf{pounds}}$$

Sorting Out Information in Word Problems

1. a
2. b
3. a
4. d
5. $390.00
   − 80.00
   $310.00
6. 26
   × .30
   $7.80
7. 464
   54
   + 28
   546 people
8. 12
   + 9
   21

   21
   × 21
   21
   42
   441 students

Recognizing Incomplete Information

1. **yes**
2. **no** the distance Thomas drives to work
3. **no** the number of months she had to make payments
4. **no** the number of guests at the party
5. **yes**
6. **no** the cost of curtain fabric

Recognizing Incomplete Information in Problems

1. **b $20**

   $3
   × 2
   $6

   $2
   × 4
   $8

   $1
   × 6
   $6

   $6
   8
   + 6
   $20
2. **c**
3. **b 900 people**

   30
   × 15
   150
   30
   450

   450
   × 2
   900 people
4. **d**
5. **d**

Identifying the Operation

1. add
2. subtract
3. multiply
4. divide
5. multiply
6. divide
7. subtract
8. subtract

Rounding Numbers to Choose Operations

1. **137 dictionaries**	$65 rounded becomes $70; $9,570 rounded becomes $9,600, so $9,600 ÷ $70 = 137 dictionaries
2. **2,000 cows**	1,526 rounded becomes 1,500; 498 rounded becomes 500, so 1,500 + 500 = 2,000.
3. **56,000 appliances**	2,786 rounded becomes 2,800; 22 rounded becomes 20, so 2,800 × 20 = 56,000.
4. **300 yards**	1,652 rounded becomes 1,700; 1,397 rounded becomes 1,400, so 1,700 − 1,400 = 300.
5. **4,000 yards**	76 rounded becomes 80; 53 rounded becomes 50, so 80 × 50 = 4,000 yards.

Comparing Problems to Choose the Operation

1. **a.** subtraction
   b. subtraction
   c. addition
   a; *b*; subtracting to find a difference
2. **a.** multiplication
   b. multiplication
   c. division
   a; *b*; multiplying to find a total
3. **a.** division
   b. multiplication
   c. division
   a; *c*; dividing to find an even amount

Estimating Answers to Word Problems

1. **Estimate**
   150
   × $.10
   $15.00

   Real
   147
   × $.13
   441
   147
   $19.11

2.

Estimate	Real
25	**26**
20)500	18)468
40	36
100	108
100	108

3.

Estimate	Real
$900	$871
− 200	− 199
$700	**$672**

4.

Estimate	Real
$1,300	$1,320
200	229
1,900	1,898
+ 2,100	+ 2,102
$5,500	**$5,549**

Deciding Whether the Answer Makes Sense

1. c or d
2. a or b
3. b
4. b or c
5. b

CHAPTER 4: MEASUREMENTS

Comparing Measurements

1. a
2. c
3. b
4. b
5. c
6. a
7. b
8. c
9. yard
10. century
11. ton
12. pint
13. gallon
14. kilometer
15. tablespoon

Converting Measurements

1. a. 6,000 pounds 2,000
b. multiply × 3
6,000

2. a. 180 seconds 60
b. multiply × 3
180

3. a. 2 pounds **2**
b. divide 16)32
32

4. a. 5 feet **5**
b. divide 12)60
60

5. a. 52 weeks **52**
b. divide 7)364
35
14
14

6. a. 80 years 10
b. multiply × 8
80

7. a. 2 days **2**
b. divide 24)48
48

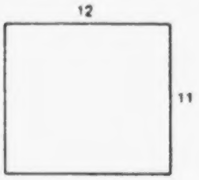
8. a. 24 fluid ounces 8
b. multiply × 3
24

9. a. 15,840 feet 5,280
b. multiply × 3
15,840

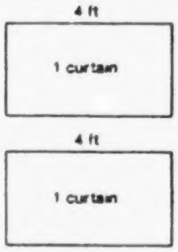
10. a. 2 years **2**
b. divide 12)24
24

Drawing Pictures

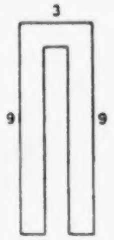
1. 2 lengths + 2 widths = picture
2(12) + 2(11) = **46 in**



2. (1) 2 × 4 ft = 8 ft curtain
(2) 3 yd × 3 ft = 9 ft
(3) 9 ft − 8 ft = **1 ft left**



3. (1) 9 + 9 + 3 = framing per door
21 ft = framing
(2) 21 ft × 8 doors = **168 ft**



4. a. 92 ft
b. 12 ft
c. 53 ft
d. 53 ft

53 ft	53 ft
× 92 ft	× 12 ft
106	106
477	53
4,876 sq ft	636 sq ft

4,876 *(front yard)*
− 636 *(driveway)*
4,240 sq ft

Percents as Ratios and Fractions

1. 72 out of every 100 parts; $\frac{72}{100}$
2. 9 out of every 100 people; $\frac{9}{100}$
3. 17 out of every 100 scores; $\frac{17}{100}$
4. 98 out of every 100 students; $\frac{98}{100}$
5. $33\frac{1}{3}$ out of every 100 houses; $\frac{33\frac{1}{3}}{100}$
6. 6.5 out of every 100 cents; $\frac{6.5}{100}$
7. $300 for every $100 or $3.00 for every $1.00; $\frac{300}{100}$

Percents As Decimals

1. .01
2. $.25
3. .08
4. .129
5. 1.10
6. 3
7. 7.6%
8. 10%
9. 200%
10. 31.1%

Using the "Of" Formula with Percents

1. EXPRESSION:
   6.5% of the purchase = sales tax
   SOLUTION: .065 × $132.76 = **$8.63**
2. EXPRESSION:
   40% of registered voters = cast ballots
   SOLUTION: .40 × 3,905 = **1,562 voters**
3. EXPRESSION: 75% of 300 questions = the number required to earn a *C*
   SOLUTION: .75 × 300 = **225 questions**
4. EXPRESSION: 12% of last year's amount of snow = 10.08 inches
   SOLUTION: .12 of $\boxed{?}$ = 10.08
   $\boxed{?}$ = 10.08 ÷ .12 = **84 in**
5. EXPRESSION: 30% of the price of the dinette set = $300
   SOLUTION: .30 of $\boxed{?}$ = $300
   $\boxed{?}$ = $300 ÷ .30 = **$1,000**
6. EXPRESSION: 150% of a home's former price = $120,000
   SOLUTION: 1.50 of $\boxed{?}$ = $120,000
   $\boxed{?}$ = $120,000 ÷ 1.50 = **$80,000**
7. EXPRESSION: What percent of $585 = $100
   SOLUTION: $100 ÷ $585 = **17%**
8. EXPRESSION: $7 off on $21 shirt = what percent of savings
   SOLUTION: $7 ÷ $21 = **$33\frac{1}{3}$%**

Using the Percent Circle

1. 4,000 ÷ 8,000 = **50%**
2. $19,000 × .085 = **$1,615**
3. 1,100 stalks × .15 = **165 stalks**
4. $107.10 ÷ .07 = **$1,530**
5. $182 ÷ 3.50 = **$52**
6. 475 mi ÷ .25 = **1,900 mi**
7. $6.75 ÷ $125.00 = **5.4%**

Percent of Increase or Decrease

1. $.30 − $.20 = $.10
   $.10 ÷ $.20 = **50%**
2. $7 − $6 = $1
   $1 ÷ $6 = **16.6% or $16\frac{2}{3}$%**
3. $90,000 − $50,000 = $40,000
   $40,000 ÷ $50,000 = **80%**
4. $120 − $40 = $80
   $80 ÷ $40 = **200%**
5. growth, raise, profit, markup
6. $10,000 − $8,000 = $2,000
   $2,000 ÷ $10,000 = **20%**
7. $550 − $495 = $55
   $55 ÷ $550 = **10%**
8. 12,000 − 3,000 = 9,000
   9,000 ÷ 12,000 = **75%**
9. 8 − 7 = 1
   1 ÷ 8 = **$12\frac{1}{2}$%**
10. depreciation, discount, lost, shrinkage

Original and Sale Price

1. 100% − 25% = 75%
   $60 ÷ .75 = **$80**
2. 100% − 5% = 95%
   $10.45 ÷ .95 = **$11.00**
3. 100% − 30% = 70%
   $24 ÷ .70 = **$34.29**
4. 100% − 75% = 25%
   $200 ÷ .25 = **$800**
5. $12,550 × .20 = $2,510
   $12,550 − $2,510 = **$10,040**
6. $105 × .40 = $42
   $105 − $42 = **$63**

BASIC ESSENTIALS OF MATHEMATICS: BOOK ONE - ANSWER KEY

1. addition
   2,089 miles
2. subtraction
   326 books
3. subtraction
   $187
4. addition
   314

1. $550
2. 142,339 people
3. North Carolina
   18,636 square miles
4. 8,354 feet
5. 59,149 books
6. 4,250,000 miles
7. Arizona
   422,006 people
8. 1,012 cards
9. 9,867 people
10. 1,832 feet

1.	24	14	25	15
2.	6	16	24	0
3.	45	28	48	63
4.	40	54	36	12
5.	42	56	30	9

1.	10	14	0	3	20	12	0	36
2.	40	15	0	24	16	0	8	45
3.	12	0	18	9	18	30	24	24
4.	7	0	54	9	40	21	0	32
5.	0	36	49	64	9	28	0	42
6.	81	63	0	27	8	32	48	0
7.	6	72	0	24	56	36	35	0
8.	0	45	27	7	20	42	63	54
9.	72	56	16	35	0	4	30	48

1.	48	66	68	60	77	48	90	63
2.	84	93	80	69	28	99	80	55
3.	144	156	460	1,089	882	610	528	968
4.	2,808	3,936	6,946	9,548	9,499	9,030		
5.	286,836	385,842	715,990	896,972	236,430			

1.	188	250	128	72	144	120
2.	320	186	360	128	142	129
3.	1,959	3,186	2,400	2,370	2,160	1,728
4.	2,568	2,643	2,240	2,680	1,888	1,448
5.	3,264	3,616	2,394	3,861	2,368	3,897
6.	2,428	1,832	3,800	1,518	2,020	3,400
7.	6,920	13,030	11,229	10,150	9,416	21,882

1.	817	1,512	2,275	1,296	742	2,001	1,440	1,188
2.	1,738	1,376	6,545	1,488	2,976	2,279	1,008	2,175
3.	5,735	6,700	16,280	5,698	8,740	26,316	43,148	
4.	55,012	59,856	90,093	128,968				
	77,392	113,520	219,375					
5.	7,595	21,720	800					

1.	90	120	70	240	240	400
2.	58,138	14,896	12,180	9,996	22,311	48,018
3.	6,250	3,650	31,850	4,960	27,420	31,160
4.	10,140	32,240	23,400	18,360	2,180	48,240
5.	42,000	6,000	30,000	20,000	21,000	27,000

1.	336	350	702	810	688	536	392
2.	5,760	0	4,950	7,136	3,627	3,752	
3.	5,495	849	6,030	4,675	4,760	2,592	
4.	1,325	1,840	5,220	741	1,120	1,850	250
5.	55,545	4,000	27,900	35,144	15,000	6,200	
6.	53,500	475,545	108,600	158,172	15,700	42,075	
7.	27,000	141,500	1,980				

8. 92,400 pounds
9. 3,500,000 pounds

1.	16	2	8				
2.	32	8	4				
3.	35	5	7				
4.	27	9	3				
5.	40	5	8				
6.	18	3	6				
7.	36	9	4				
8.	45	5	9				
9.	28	4	7				
10.	20	5	4				
11.	0	0	0				
12.	0	0	0				
13.	6	8	5	5	6	3	3
14.	8	7	7	5	2	7	8
15.	9	9	8	9	9	6	3
16.	5	1	2	4	5	3	6
17.	3	3	2	2	2	3	4

1.	2	3	4	5	6	7
2.	2	4	6	8	5	7
3.	2	5	8	4	6	9
4.	2	4	3	5	7	6
5.	3	6	5	9	4	7
6.	9	3	5	4	7	6
7.	3	6	2	4	8	5
8.	6	8	9	7	7	5
9.	7	9	7	9	9	6
10.	80	—	91	31	21	61
11.	20	21	51	51	51	62
12.	71	71	41	61	30	70

1.	23	16	16	13	12
2.	12	13	13	17	16

1.	16	12	23	17	13	14
2.	19	18	28	12	12	24
3.	58	64	43	33	32	32
4.	142	121	121	121	151	141

1.	23 R1	21 R3	11 R1	13 R1	11 R3
2.	141 R1	121 R3	114 R2	144 R2	124 R6
3.	29 R3	21 R1	31 R5	85 R3	78 R2

1.	too large 1	too small 4	too large 4
2.	too large 3	too large 2	too small 3
3.	too large 7	too large 2	too large 1

James T. Shea, Basic Essentials of Mathematics: Book One (Texas: Steck-Vaughn Co., 1991), pp. 120-128.

1. 213 R1 212 111 R10 221
2. 57 R24 535 R7 312 131 R8
3. 224 123 R408 123 224
4. 135 R9 341 163 R4 342

1. 406 3,080 6,001
2. 3,034 R197 3,010 R5 2,041 R12
3. 203 R2 6,510 120 R113
4. 2,024 R19 405 3,009 R50

1. 187
2. 165 pounds
3. 52 miles
4. 410 miles per hour
5. $40
6. 216 pounds

1. 3,200 300 1,800 5,600
2. 2,400 4,800 2,000 2,700
3. 7,600 23,700 11,400 12,000
4. 20 20 29
5. 66 30 16
6. 6 20 13

1. 12 24 15 R4 22 115 169
2. 31 R1 43 R1 25 R3 17 R6 62 R3 31 R7
3. 114 R1 111 211 R19 56 98 R7
4. 601 R6 2,000 106 406 R2
5. 900 6,000 6 4
6. 1,060 miles; averaged 106 miles per day
7. $5.00

1. 26,880 oranges
2. 932 people
3. 133,300 miles
4. $7.00
5. 2,748 days
6. 12 hours
7. 145 crates
8. 1,250 bushels
9. $13,482
10. 12,552 miles
11. $102

1. 1,313 4,037 20,000 7,879 8,192 25,855
2. 621 575 6,583 951 964 591
3. 868 16,828 4,384 9,702 94,163 727,584 25,000
4. 1 R3 19 342 R5 41 R2 234 704 R10
5. twelve thousand, three hundred thirteen
6. 37
7. 700 2,100
8. 1,600 9
9. 152 tapes
10. 432 tapes

1. 4
2. 1
3. $\frac{1}{4}$
4. $\frac{3}{4}$
5. 4
6. 2
7. $\frac{2}{3}$ $\frac{5}{8}$ $\frac{4}{6}$
8. $\frac{3}{2}$ $\frac{7}{6}$ $\frac{4}{4}$
9. $\frac{3}{4}$ $\frac{5}{4}$ $\frac{1}{2}$

1. improper, proper, improper
2. mixed number, proper, proper
3. proper, improper, mixed number
4. improper, proper, proper
5. mixed number, improper, improper

The student should have circled:

6. $\frac{6}{8}, \frac{5}{6}$
7. $\frac{1}{8}$
8. $\frac{6}{8}, \frac{9}{12}, \frac{1}{8}, \frac{20}{21}, \frac{1}{9}$
9. $\frac{3}{7}, \frac{1}{13}$
10. $\frac{5}{6}, \frac{3}{12}$

The student should have put an x on:

6. $\frac{12}{6}, \frac{13}{4}, \frac{8}{8}$
7. $\frac{4}{3}, \frac{9}{7}, \frac{5}{5}$
8. $\frac{18}{15}, \frac{6}{5}$
9. $\frac{15}{2}, \frac{6}{2}, \frac{16}{15}$
10. $\frac{9}{9}, \frac{4}{4}, \frac{10}{6}, \frac{12}{7}$

1. $\frac{2}{3}$ is equivalent to $\frac{4}{6}$ $\frac{3}{5}$ is not equivalent to $\frac{3}{6}$
2. $\frac{3}{4}$ is equivalent to $\frac{6}{8}$ $\frac{3}{4}$ is not equivalent to $\frac{1}{4}$
3. $\frac{6}{8}$ is equivalent to $\frac{3}{4}$ $\frac{1}{2}$ is equivalent to $\frac{2}{4}$

1. 6 6 3 2 10
2. 16 20 24 12 10
3. $\frac{2}{3}$ $\frac{1}{2}$ $\frac{3}{4}$ $\frac{1}{3}$ $\frac{3}{4}$
4. $\frac{1}{2}$ $\frac{2}{3}$ $\frac{1}{2}$ $\frac{4}{5}$ $\frac{1}{2}$
5. $3\frac{1}{2}$ $1\frac{1}{5}$ $3\frac{1}{4}$ $4\frac{1}{2}$ 3
6. $17\frac{1}{3}$ 4 $6\frac{1}{2}$ $33\frac{1}{3}$ $1\frac{1}{8}$

1. $\frac{0}{5}, \frac{1}{5}, \frac{2}{5}, \frac{3}{5}, \frac{4}{5}, \frac{5}{5}$
2. $\frac{1}{8}, \frac{3}{8}, \frac{5}{8}, \frac{7}{8}, \frac{9}{8}, \frac{11}{8}$
3. $\frac{0}{4}, \frac{1}{4}, \frac{2}{4}, \frac{3}{4}, \frac{5}{4}, \frac{6}{4}$
4. $\frac{1}{6}, \frac{3}{6}, \frac{4}{6}, \frac{7}{6}, \frac{8}{6}, \frac{9}{6}$
5. $\frac{0}{11}, \frac{1}{11}, \frac{2}{11}, \frac{5}{11}, \frac{9}{11}, \frac{11}{11}$
6. $\frac{5}{16}$ $\frac{7}{16}$ $\frac{9}{16}$ $\frac{11}{16}$
7. $\frac{3}{4}$ $\frac{13}{16}$ $\frac{7}{8}$ $\frac{3}{8}$
8. $\frac{3}{8}$ $\frac{6}{8}$ $\frac{7}{8}$ $\frac{1}{6}$ $\frac{2}{6}$ $\frac{3}{6}$
9. $\frac{2}{6}$ $\frac{4}{6}$ $\frac{5}{6}$ $\frac{2}{8}$ $\frac{3}{8}$ $\frac{4}{8}$
10. $\frac{1}{8}$ $\frac{3}{8}$ $\frac{6}{8}$ $\frac{2}{6}$ $\frac{3}{6}$ $\frac{4}{6}$

1. $\frac{5}{8}$ $\frac{3}{5}$ $\frac{4}{9}$ $\frac{3}{4}$ $\frac{7}{10}$ $\frac{5}{6}$ $\frac{2}{3}$ $\frac{5}{8}$
2. $\frac{11}{12}$ $\frac{9}{10}$ $\frac{11}{15}$ $\frac{9}{20}$ $\frac{8}{9}$ $\frac{5}{6}$ $\frac{7}{8}$ $\frac{7}{12}$
3. $\frac{3}{4}$ $\frac{2}{5}$ $\frac{5}{9}$ $\frac{7}{16}$ $\frac{1}{2}$ $\frac{2}{5}$ $\frac{1}{2}$ $\frac{1}{3}$
4. $2\frac{2}{3}$ $4\frac{1}{2}$ $1\frac{1}{4}$ $1\frac{1}{5}$ $1\frac{2}{3}$ $1\frac{1}{3}$ $1\frac{3}{10}$ $1\frac{1}{4}$
5. $1\frac{1}{4}$ $1\frac{3}{4}$ $1\frac{9}{10}$ $1\frac{7}{8}$ $2\frac{4}{5}$ $3\frac{1}{2}$ $3\frac{2}{3}$ 8

1. $\frac{1}{3}$ $\frac{1}{2}$ $\frac{2}{3}$ $\frac{5}{8}$ $\frac{3}{8}$ $\frac{3}{4}$
2. $\frac{5}{12}$ $\frac{5}{8}$ $\frac{5}{6}$ $\frac{5}{6}$ $\frac{7}{8}$ $\frac{7}{8}$
3. $\frac{1}{2}$ $\frac{3}{5}$ $\frac{8}{9}$ $\frac{3}{4}$ $\frac{1}{2}$
4. $1\frac{1}{5}$ $1\frac{1}{6}$ $1\frac{3}{8}$ $1\frac{1}{4}$ $1\frac{1}{8}$
5. $1\frac{1}{12}$ $1\frac{3}{16}$ $1\frac{1}{2}$ $1\frac{1}{2}$ $1\frac{4}{15}$
6. $1\frac{1}{3}$ $1\frac{4}{9}$ $\frac{8}{9}$ $\frac{6}{7}$ $1\frac{2}{15}$

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1. $\frac{9}{12}$ $\frac{5}{15}$ $\frac{8}{20}$ $\frac{20}{24}$ $\frac{9}{12}$
   $\frac{2}{12}$ $\frac{12}{15}$ $\frac{5}{20}$ $\frac{21}{24}$ $\frac{4}{12}$
2. $1\frac{5}{18}$ $1\frac{7}{15}$ $\frac{19}{30}$ $\frac{13}{14}$ $1\frac{1}{9}$
3. $1\frac{5}{12}$ $1\frac{13}{30}$ $\frac{19}{28}$ $\frac{3}{4}$ $\frac{17}{20}$

1. $1\frac{1}{4}$ $\frac{5}{8}$ 1 2 $1\frac{4}{5}$ $1\frac{1}{2}$
2. $2\frac{1}{3}$ $1\frac{4}{5}$ $1\frac{1}{2}$ $2\frac{1}{2}$ $1\frac{13}{16}$ $1\frac{2}{3}$
3. $2\frac{1}{5}$ $1\frac{3}{4}$ $2\frac{1}{15}$ $1\frac{1}{2}$ $1\frac{9}{16}$ $1\frac{2}{9}$
4. 4 2 3 2 4 3
5. $1\frac{11}{12}$ 3 $1\frac{5}{8}$ 2 $1\frac{5}{12}$ 4
6. $2\frac{1}{12}$ $2\frac{9}{10}$ $3\frac{1}{6}$ $4\frac{1}{5}$ $3\frac{1}{8}$ $5\frac{1}{4}$
7. $2\frac{2}{5}$ $2\frac{4}{7}$ $2\frac{7}{10}$ 2 $1\frac{5}{8}$ $2\frac{2}{5}$

1. $6\frac{1}{6}$ $3\frac{1}{10}$ $4\frac{1}{14}$ $10\frac{1}{3}$ $9\frac{1}{4}$
2. $15\frac{7}{9}$ $5\frac{3}{8}$ $15\frac{7}{8}$ $9\frac{3}{5}$ $19\frac{5}{8}$
3. $9\frac{1}{14}$ $7\frac{1}{12}$ $10\frac{3}{10}$ $20\frac{3}{20}$ $20\frac{7}{24}$
4. $2\frac{3}{5}$ $4\frac{5}{12}$ $4\frac{13}{24}$ $22\frac{1}{10}$ $8\frac{7}{12}$
5. $37\frac{1}{2}$ $16\frac{11}{18}$ $41\frac{9}{10}$ $3\frac{13}{15}$ $30\frac{2}{9}$

1. 4 4 4 3 3 8
2. 4 12 12 10 10 8
3. $\frac{3}{4}$ $\frac{2}{3}$ $\frac{3}{5}$ $\frac{1}{2}$ $\frac{3}{5}$ $\frac{2}{3}$
4. $\frac{3}{5}$ $\frac{3}{4}$ $\frac{3}{4}$ $\frac{1}{4}$ $\frac{1}{4}$ $\frac{1}{3}$
5. $1\frac{1}{5}$ $2\frac{1}{3}$ $2\frac{1}{2}$ $1\frac{1}{2}$ $1\frac{1}{2}$ $2\frac{3}{5}$
6. 3 4 3 $1\frac{7}{8}$ $3\frac{1}{2}$ $2\frac{1}{4}$
7. 1 1 $\frac{3}{4}$ $\frac{3}{4}$ 1
8. $1\frac{7}{15}$ $1\frac{1}{6}$ $\frac{7}{8}$ $\frac{8}{9}$ $1\frac{1}{12}$
9. $1\frac{1}{4}$ $1\frac{2}{5}$ $1\frac{1}{2}$ $1\frac{7}{8}$ $1\frac{9}{10}$
10. $10\frac{29}{30}$ $32\frac{5}{12}$ $21\frac{3}{8}$ $13\frac{5}{6}$ $21\frac{1}{10}$
11. $\frac{1}{4}$ in.

1. $\frac{1}{10}$ $\frac{7}{16}$ $\frac{5}{12}$ $\frac{1}{9}$ $\frac{1}{4}$ $\frac{1}{6}$
2. $\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{3}$ $\frac{1}{3}$ $\frac{1}{2}$ $\frac{1}{4}$
3. $\frac{2}{3}$ $\frac{1}{3}$ $\frac{1}{3}$ $\frac{1}{2}$ $\frac{1}{4}$ $\frac{1}{2}$
4. $\frac{3}{16}$ $\frac{1}{4}$ $\frac{1}{2}$ $\frac{1}{5}$ $\frac{3}{5}$ $\frac{1}{3}$
5. $\frac{1}{2}$ $\frac{2}{3}$ $\frac{3}{4}$ $\frac{1}{5}$ $\frac{1}{5}$ $\frac{2}{5}$
6. $\frac{3}{5}$ $\frac{1}{3}$ $\frac{4}{5}$ $\frac{1}{4}$ $\frac{3}{8}$ $\frac{1}{2}$

1. $\frac{3}{8}$ $\frac{1}{8}$ $\frac{1}{2}$ $\frac{1}{4}$ $\frac{1}{8}$
2. $\frac{1}{6}$ $\frac{1}{14}$ $\frac{3}{8}$ $\frac{13}{20}$ $\frac{1}{4}$
3. $\frac{7}{12}$ $\frac{1}{32}$ $\frac{1}{40}$ $\frac{1}{12}$ $\frac{1}{30}$
4. $\frac{7}{20}$ $\frac{17}{30}$ $\frac{7}{16}$ $\frac{7}{18}$ $\frac{11}{32}$
5. $3\frac{1}{6}$ $1\frac{5}{8}$ $2\frac{7}{15}$ $3\frac{1}{4}$ 1
6. $\frac{3}{5}$ $1\frac{11}{14}$ $1\frac{1}{8}$ $1\frac{23}{30}$ $\frac{5}{6}$

1. $7\frac{3}{8}$ $9\frac{7}{24}$ $15\frac{1}{4}$ $12\frac{7}{12}$
2. $8\frac{1}{5}$ $16\frac{8}{21}$ $15\frac{1}{2}$ $19\frac{3}{10}$
3. $7\frac{1}{4}$ $16\frac{5}{12}$ $11\frac{2}{5}$ $7\frac{1}{14}$
4. $10\frac{3}{20}$ $6\frac{11}{30}$ $12\frac{5}{12}$ $8\frac{1}{16}$
5. $9\frac{7}{12}$ $6\frac{7}{15}$ $8\frac{1}{3}$ $9\frac{3}{10}$
6. $38\frac{7}{16}$ inches
7. $12\frac{3}{8}$ pounds

1. $3\frac{1}{4}$ $\frac{2}{21}$ $1\frac{7}{12}$ $3\frac{2}{9}$
2. $6\frac{7}{15}$ $5\frac{1}{2}$ $3\frac{5}{12}$ $5\frac{1}{3}$
3. $18\frac{13}{24}$ $4\frac{4}{15}$ $6\frac{13}{30}$ $12\frac{3}{10}$
4. $8\frac{1}{5}$ $9\frac{3}{5}$ $5\frac{7}{30}$ $61\frac{1}{3}$
5. $3\frac{3}{8}$ $2\frac{3}{10}$ $1\frac{3}{14}$ $13\frac{4}{15}$
6. $3\frac{3}{16}$ $1\frac{5}{14}$ $5\frac{5}{24}$ $112\frac{1}{6}$

1. 2 3 4 2 6
2. 7 9 8 10 15
3. $7\frac{3}{5}$ $4\frac{1}{4}$ $2\frac{1}{6}$ $1\frac{2}{3}$ $1\frac{5}{9}$
4. $7\frac{6}{11}$ $1\frac{1}{3}$ $7\frac{5}{7}$ $5\frac{1}{6}$ $6\frac{5}{12}$
5. $7\frac{2}{3}$ $1\frac{2}{5}$ $4\frac{1}{2}$ $2\frac{3}{4}$ $7\frac{1}{6}$
6. $\frac{1}{2}$ $9\frac{1}{4}$ $14\frac{8}{9}$ $\frac{10}{11}$ $19\frac{11}{15}$

1. 7 6 9 13 3
2. $7\frac{7}{8}$ $2\frac{29}{30}$ $3\frac{3}{4}$
3. $8\frac{5}{6}$ $5\frac{5}{6}$ $7\frac{23}{30}$
4. $5\frac{13}{15}$ $8\frac{33}{35}$ $8\frac{7}{12}$
5. $7\frac{41}{42}$ $4\frac{7}{10}$ $7\frac{19}{20}$
6. $7\frac{17}{18}$ $4\frac{19}{20}$ $2\frac{7}{9}$

1. $\frac{2}{3}$ $\frac{3}{4}$ $\frac{2}{3}$ $\frac{1}{2}$ $\frac{1}{2}$ $\frac{3}{8}$ $\frac{1}{2}$
2. 4 4 4 1 8 10
3. 5 3 11 4 6 7
4. $\frac{3}{4}$ $\frac{2}{3}$ $\frac{1}{2}$ $\frac{1}{4}$ $\frac{1}{4}$
5. $\frac{1}{12}$ $\frac{5}{8}$ $\frac{1}{6}$ $\frac{2}{9}$ $\frac{5}{18}$ $\frac{1}{4}$
6. $5\frac{1}{40}$ $6\frac{1}{8}$ $9\frac{4}{21}$ $12\frac{3}{10}$ $27\frac{1}{24}$
7. $8\frac{1}{4}$ $2\frac{1}{6}$ $3\frac{2}{5}$ $11\frac{5}{24}$
8. $9\frac{1}{2}$ $1\frac{2}{3}$ $7\frac{3}{5}$ $4\frac{1}{4}$ $10\frac{7}{12}$
9. $3\frac{5}{12}$ $6\frac{1}{2}$ $2\frac{3}{8}$ $10\frac{1}{3}$
10. $1\frac{1}{4}$ hours

1. Multiply by 3.
405, 1,215
2. Subtract 4.
36, 32
3. Add $1\frac{1}{3}$.
14
4. Divide by 4.
80

1. $1\frac{3}{8}$ cups
2. $\frac{3}{16}$ ounce
3. Bentley, $\frac{1}{2}$ dollar
4. $\frac{3}{8}$ inch
5. $1\frac{3}{8}$ cups
6. 24, 30
7. $4\frac{3}{4}$ pounds
8. $\frac{5}{8}$ mile
9. $1\frac{1}{4}$ pounds
10. 10

1. $\frac{1}{9}$ $\frac{1}{12}$ $\frac{1}{4}$ $\frac{1}{8}$
2. $\frac{1}{10}$ $\frac{1}{10}$ $\frac{1}{6}$ $\frac{1}{25}$
3. $\frac{4}{27}$ $\frac{2}{5}$ $\frac{1}{2}$ $\frac{1}{4}$
4. $\frac{4}{15}$ $\frac{3}{25}$ $\frac{3}{20}$ $\frac{6}{25}$
5. $\frac{2}{9}$ $\frac{1}{5}$ $\frac{3}{50}$ $\frac{1}{18}$
6. $\frac{3}{16}$ $\frac{7}{50}$ $\frac{1}{16}$ $\frac{2}{7}$
7. $\frac{2}{25}$ $\frac{1}{5}$ $\frac{2}{49}$ $\frac{1}{9}$
8. $\frac{3}{5}$ $\frac{1}{10}$ $\frac{1}{7}$ $\frac{6}{35}$
9. 6 quarts
10. $\frac{3}{8}$ pound
11. $\frac{9}{32}$ mile

1. $\frac{2}{7}$ $\frac{1}{15}$ $\frac{3}{10}$ $\frac{3}{4}$ $\frac{1}{14}$
2. $\frac{1}{4}$ $\frac{1}{10}$ $\frac{1}{7}$ $\frac{3}{8}$ $\frac{1}{2}$
3. $\frac{1}{6}$ $\frac{1}{4}$ $\frac{1}{9}$ $\frac{2}{9}$ $\frac{1}{6}$
4. $\frac{3}{5}$ $\frac{4}{7}$ $\frac{5}{14}$ $\frac{3}{22}$ $\frac{4}{9}$
5. $\frac{1}{3}$ $\frac{1}{4}$ $\frac{5}{18}$ $\frac{1}{3}$ $\frac{1}{2}$
6. $\frac{1}{3}$ $\frac{1}{9}$ $\frac{1}{8}$ $\frac{1}{3}$ $\frac{1}{6}$
7. $\frac{3}{8}$ mile
8. $\frac{3}{16}$ mile

1. $1\frac{1}{3}$ $1\frac{1}{4}$ $1\frac{1}{5}$
2. $2\frac{2}{3}$ $2\frac{1}{2}$ $2\frac{2}{5}$
3. $3\frac{1}{2}$ $6\frac{3}{4}$ $4\frac{4}{5}$
4. 7 10 15
5. 8 4 10
6. 1 5 50
7. 15 30 15
8. 9 18 20
9. 6 $2\frac{6}{7}$ 15
10. 21 12 $11\frac{1}{3}$
11. 10 8 12
12. $3\frac{3}{4}$ yards

1. 6 $14\frac{1}{4}$ 26
2. 21 9 44
3. $7\frac{13}{15}$ $100\frac{1}{10}$ $43\frac{1}{2}$
4. 242 94 123
5. $14\frac{1}{4}$ $25\frac{3}{7}$ $7\frac{1}{2}$
6. $4\frac{9}{10}$ $16\frac{1}{10}$ 52
7. $19\frac{1}{4}$ $10\frac{1}{3}$ 51
8. $27\frac{1}{2}$ $5\frac{1}{2}$ $33\frac{1}{2}$

1. $1\frac{3}{4}$ 2 $1\frac{1}{5}$
2. $3\frac{1}{2}$ 1 $\frac{19}{24}$
3. $\frac{4}{5}$ $1\frac{3}{4}$ $2\frac{5}{6}$
4. 3 $1\frac{1}{2}$ $2\frac{7}{12}$
5. $1\frac{5}{16}$ $\frac{1}{2}$ $1\frac{1}{3}$
6. $3\frac{5}{6}$ 2 1
7. $\frac{5}{6}$ $1\frac{3}{16}$ $1\frac{1}{2}$
8. 2 $2\frac{3}{16}$ $1\frac{3}{8}$
9. $\frac{3}{4}$ 1 $3\frac{1}{48}$

1. $5\frac{13}{24}$ $3\frac{1}{3}$ $8\frac{1}{6}$
2. $10\frac{4}{5}$ $4\frac{19}{20}$ $7\frac{7}{8}$
3. $1\frac{7}{8}$ 10 $6\frac{7}{8}$
4. 10 $14\frac{7}{16}$ $1\frac{5}{16}$
5. 9 $8\frac{2}{3}$ $6\frac{3}{4}$
6. $12\frac{2}{15}$ $6\frac{3}{4}$ $10\frac{23}{30}$
7. $2\frac{1}{5}$ $10\frac{5}{8}$ $10\frac{1}{45}$
8. $3\frac{1}{5}$ $10\frac{11}{15}$ $21\frac{2}{3}$
9. 15 8 $8\frac{47}{56}$

1. $4\frac{1}{2}$ $3\frac{2}{5}$ $3\frac{1}{3}$ $3\frac{1}{3}$ $2\frac{2}{3}$ $3\frac{3}{7}$
2. $2\frac{1}{2}$ $1\frac{1}{2}$ $5\frac{1}{3}$ $2\frac{2}{5}$ $2\frac{5}{8}$ $4\frac{3}{4}$
3. $\frac{9}{2}$ $\frac{5}{1}$ $\frac{19}{3}$ $\frac{29}{4}$ $\frac{3}{1}$ $\frac{33}{8}$
4. $\frac{27}{5}$ $\frac{31}{4}$ $\frac{9}{1}$ $\frac{33}{5}$ $\frac{153}{10}$ $\frac{101}{8}$
5. $\frac{3}{7}$ $\frac{3}{5}$ $\frac{1}{3}$ $\frac{5}{8}$ $\frac{25}{48}$
6. $\frac{1}{3}$ $\frac{2}{5}$ $\frac{1}{6}$ $\frac{3}{16}$ $\frac{1}{6}$
7. 9 5 3 4 9
8. 16 18 6 15 35
9. $2\frac{1}{6}$ 1 66 38 $1\frac{5}{18}$
10. 30 $\frac{5}{6}$ 25 $52\frac{1}{2}$ $81\frac{1}{4}$
11. \$3.00 12. 8 yards 13. \$7.00 14. Yes

1. $\frac{1}{2}$ $\frac{1}{3}$ $\frac{1}{5}$ $\frac{1}{10}$
2. $\frac{2}{1}$ $\frac{3}{1}$ $\frac{4}{1}$ $\frac{5}{1}$
3. $\frac{3}{2}$ $\frac{4}{3}$ $\frac{8}{5}$ $\frac{8}{7}$
4. $\frac{4}{9}$ $\frac{1}{3}$ $\frac{1}{8}$ $\frac{1}{8}$ $\frac{1}{10}$
5. $\frac{2}{5}$ $\frac{1}{16}$ $\frac{5}{72}$ $\frac{7}{24}$ $\frac{5}{54}$
6. $\frac{3}{28}$ $\frac{5}{54}$ $\frac{5}{22}$ $\frac{7}{36}$ $\frac{9}{64}$

1. 2 3 2 2 2
2. $1\frac{1}{5}$ 8 $\frac{1}{2}$ $\frac{5}{7}$ $\frac{5}{6}$
3. $\frac{8}{27}$ $\frac{5}{9}$ $1\frac{1}{2}$ $1\frac{1}{3}$ $2\frac{1}{10}$
4. 2 $\frac{1}{4}$ $\frac{5}{8}$ $\frac{2}{3}$ $\frac{7}{9}$
5. 24 squares
6. 48 shakers
7. 10 bars

1. 25 16 27 16
2. 15 16 15 24
3. 36 24 27 64
4. $25\frac{1}{2}$ $24\frac{1}{2}$ 35 42
5. 35 80 50 48
6. 45 45 120 49
7. 81 70 100 128
8. 96 cans
9. 16 plots

1. $\frac{1}{2}$ $\frac{1}{3}$ $\frac{1}{4}$
2. $1\frac{1}{2}$ $1\frac{3}{8}$ $1\frac{1}{3}$
3. $\frac{2}{7}$ $2\frac{1}{2}$ $\frac{3}{8}$
4. $1\frac{1}{2}$ $2\frac{1}{3}$ $1\frac{1}{2}$
5. $\frac{3}{10}$ $1\frac{1}{2}$ $1\frac{1}{5}$
6. $\frac{5}{16}$ $1\frac{1}{2}$ $\frac{1}{2}$
7. $4\frac{1}{2}$ $2\frac{1}{5}$ $\frac{3}{11}$
8. $1\frac{1}{3}$ $\frac{3}{8}$ $1\frac{1}{4}$
9. $\frac{7}{10}$ 2 $\frac{2}{3}$
10. $2\frac{2}{3}$ $\frac{2}{9}$ $4\frac{1}{2}$

1. 14 2 14
2. $2\frac{1}{9}$ $7\frac{3}{4}$ $7\frac{1}{3}$
3. 11 $7\frac{1}{2}$ $5\frac{1}{5}$
4. 2 $1\frac{1}{2}$ $7\frac{4}{5}$
5. $2\frac{3}{4}$ $2\frac{7}{9}$ $2\frac{3}{4}$
6. $2\frac{7}{10}$ 11 $11\frac{1}{2}$
7. $15\frac{3}{4}$ 4 $8\frac{1}{2}$
8. 6 9 $3\frac{2}{3}$
9. $3\frac{3}{32}$ $5\frac{4}{7}$ $14\frac{2}{5}$

1. $\frac{1}{2}$ $1\frac{29}{41}$ $\frac{11}{18}$
2. $3\frac{2}{3}$ $1\frac{29}{46}$ $1\frac{2}{5}$
3. $3\frac{3}{10}$ $\frac{2}{3}$ $3\frac{5}{11}$
4. $3\frac{1}{33}$ $6\frac{1}{2}$ 4
5. 2 $5\frac{2}{3}$ $4\frac{2}{9}$
6. $3\frac{3}{5}$ $5\frac{1}{3}$ $2\frac{7}{10}$
7. $1\frac{7}{8}$ $\frac{3}{8}$ 3
8. $2\frac{26}{27}$ $2\frac{2}{3}$ $\frac{1}{2}$
9. $4\frac{2}{9}$ $1\frac{1}{3}$ $\frac{2}{3}$

1. $\frac{13}{3}$ $\frac{5}{1}$ $\frac{32}{5}$ $\frac{8}{1}$ $\frac{47}{3}$ $\frac{103}{4}$ $\frac{17}{1}$ $\frac{201}{2}$
2. $5\frac{2}{3}$ $4\frac{3}{4}$ $6\frac{1}{5}$ $3\frac{1}{6}$ $2\frac{1}{8}$ $5\frac{2}{9}$ $3\frac{3}{10}$
3. $\frac{2}{3}$ $\frac{2}{3}$ $\frac{3}{4}$ $\frac{2}{5}$ $\frac{5}{9}$ $1\frac{1}{3}$ $5\frac{1}{5}$
4. $\frac{1}{6}$ $\frac{3}{2}$ $\frac{2}{1}$ $\frac{2}{9}$
5. $\frac{1}{16}$ $\frac{1}{10}$ $\frac{3}{25}$ $\frac{1}{8}$ $\frac{1}{6}$
6. 2 $\frac{1}{2}$ $\frac{2}{3}$ $\frac{5}{8}$ $\frac{5}{6}$
7. 12 15 25 $2\frac{1}{2}$ $4\frac{4}{5}$
8. $\frac{1}{3}$ $\frac{11}{20}$ $1\frac{3}{4}$ $\frac{1}{5}$ $1\frac{1}{2}$
9. $2\frac{1}{9}$ $7\frac{1}{2}$ 4 11 $2\frac{7}{9}$
10. $6\frac{2}{3}$ $1\frac{1}{5}$ $\frac{1}{2}$ $3\frac{3}{8}$ $\frac{3}{7}$
11. 4 fields
12. 8 stacks

1. 12 gallons
2. 4 frames
3. $\frac{5}{16}$ mile
4. 7 sets
5. 96 tubes
6. 15 bags
7. $51
8. $3\frac{3}{4}$ yards

1. $1\frac{17}{30}$ $9\frac{7}{20}$ $\frac{1}{2}$ $12\frac{13}{30}$ $3\frac{13}{24}$
2. $1\frac{3}{8}$ $6\frac{4}{15}$ $9\frac{13}{16}$ $6\frac{13}{20}$ $13\frac{8}{15}$
3. $1\frac{5}{12}$ $7\frac{3}{10}$ $13\frac{1}{12}$ $1\frac{3}{8}$ $10\frac{7}{9}$
4. $\frac{2}{3}$ $\frac{3}{5}$ $\frac{1}{2}$ 15
5. 16 $1\frac{3}{4}$ 15 $4\frac{1}{16}$
6. $\frac{1}{4}$ 10 $15\frac{5}{6}$ $3\frac{1}{16}$
7. $\frac{1}{16}$ $1\frac{1}{2}$ 51 $\frac{2}{3}$
8. 9 $\frac{1}{18}$ $1\frac{3}{10}$ 9
9. 16 5 $\frac{4}{5}$ $\frac{8}{9}$
10. $98\frac{1}{2}$ yards
11. 54 miles per hour
12. $3\frac{1}{6}$ dozen
13. 4 reams

1. 0.3 0.8 2.4
2. 0.32 0.68 1.21
3. $1.00 $0.10 $0.01
4. $12.00 $0.30 $0.08
5. $5.11 $0.37 $0.64

1. 0.3 0.0015
2. 0.025 0.005
3. 0.15 0.3 foot
4. 0.5 yard 0.75 mile
5. 0.015 inch 0.04 mile
6. 0.25 ton 0.0025
7. one tenth
8. one hundredth
9. one tenth
10. twenty-five hundredths
11. five tenths or fifty hundredths
12. eight and twenty-three hundredths
13. eight and fifty-nine hundredths
14. one and one thousand five hundred sixteen ten thousandths
15. thirty-nine and thirty-seven hundredths
16. six hundred twenty-one thousandths

1. < < > =
2. < > > =
3. 0.3 and 0.30, 0.5 and 0.500, 0.53, 0.3
4. 3.5 and 3.50, 4.50 and 4.500, 13, 0.51
5. 0.625 and 0.6250, 0.035 and 0.0350, 0.3, 0.65
6. 0.25, 1.01, 1.025, 1.1, 1.20, 1.25, 2.5, 25
7. D D 9. D S
8. S D 10. D S

1. $\frac{3}{10}$ 0.3
2. $\frac{15}{100}$ 0.15
3. five thousandths 0.005
4. twenty-seven thousandths $\frac{27}{1000}$
5. four and six tenths $4\frac{6}{10}$
6. fifteen and seven tenths 15.7
7. $30\frac{3}{100}$ 30.03
8. $120\frac{2}{1000}$ 120.002
9. 0.2 0.6 0.8 0.5
10. 4.16 2.35 1.36 3.84

1. 4 4 3 8 7
2. 50 52 45 79 56
3. 60 99 67 41 79
4. 6 9 5 10 3
5. 3 10 9 1 8
6. $4 $5 $8 $6 $8
7. $8 $3 $10 $6 $8
8. $22 $12 $20 $20 $63
9. $1 $6 $3 $9 $9
10. $16 $33 $70 $99 $30

11. 0.6 0.9 0.6 0.8 0.1
12. 4.1 8.7 2.3 9.3 8.9
13. 62.0 48.0 100.0 51.0 49.0
14. 40.0 25.8 72.0 21.6 32.7
15. 40.9 30.9 55.6 11.6 19.6

1. 9.52 10.345 22.536 20.401 42.24 78.9
2. 38.662 82.233 88.183 44.739 5.473 22.424
3. 23.55 45.475 1.815 22.771 23.294 36.657
4. 6.665 2.849 8.870 7.915 49.168 146.571
5. 13.1 24.89 14.81
6. 17.6 23.74 27.72

1. 5.117 2.098 1.471 2.006 1.599 0.169
2. 6.96 24.50 32.85 79.78 21.09 12.30
3. 1.625 1.226 2.809 1.094 6.388 7.45
4. 3.834 79.68 2.298 4.505 0.972 1.112
5. 4.015 2.04 22.26
6. 4.7 inches 7. 0.23 inch

1. 1, 3 2. 1, 1
3. 1, 6 4. 2, 3
5. 3, 4 6. 5, 1
7. 3, 3 8. 2, 7
9. 5, 1 10. 9, 1
11. $0.63 $0.83 $0.64 $0.84 $0.83 $0.81 $0.84
12. $0.08 $0.25 $0.14 $0.06 $0.03 $0.15 $0.02
13. $1.08 $1.23 $0.05 $1.21 $0.10 $0.15 $0.13
14. $2.10

1. $7.33 $3.64 $5.43 $7.60 $5.41 $25.63 $23.72
2. $3.07 $1.16 $1.26 $2.38 $2.17 $1.68 $4.16
3. $5.41 $3.57 $3.54 $6.81 $5.50 $13.08 $34.73
4. $108.60 5. $24.10

1. $13 $34 $221 $29
2. $80 $1 $4 $0
3. $4 $55 $125 $22
4. 10.2 8.2 9.9
5. 20.0 4.1 325.6
6. 29.9 20.5 200.0

1. 0.1 0.3 0.2 0.5 0.25 0.75
2. < < <
3. < = <
4. 3.9 4.8 5.2 6.3 9.8
5. $8 $8 $7 $9 $7
6. 0.006 0.12
7. 0.020 0.04
8. 0.4 0.040
9. four tenths $\frac{4}{10}$ 0.4
10. six thousandths $\frac{6}{1000}$ 0.006
11. three and seven tenths $3\frac{7}{10}$ 3.7
12. 2.155 $11.21 $7.20 0.7070 53.255 113.696
13. 1.16 3.136 $5.23 1.63 $4.65 1.226
14. 42 31.6 221

1. $8.00 2. yes
3. $6.00 4. 7 pounds

BEST COPY AVAILABLE

1. 1,462.7 feet
2. 79.5 kilometers
3. $24.50
4. 276.8 miles
5. $16
6. 3 pounds
7. 2,476.2 kilometers
8. $38.87
9. 4,468.37 miles
10. $5
11. 0.01 inch
12. 7.5 miles an hour

1. 0.4 0.4 1.2 2.5 45. 37.6 0.654 0.1414
2. 1.40 8.5 4.8 4.20 1.40 4.80 64.0 8.40
3. 1.724 0.252 9.78 11.70 40.8 114.08 91.2
4. 18.2 9.0 3.36 15.3 37.5 20.8 2.493
5. 16.9 33.8 2.24 5.25 98.4 21.70 350.0
6. 0.168 8.484 0.220 18.00 0.051 55.5 1.034

1. 0.18 0.018 4.90 0.252 0.64 0.477 0.380
2. 0.01288 0.408 0.1557 0.000994 0.000155
3. 14.25 4.858 46.20 0.23133 0.033354
4. 14.3820 4.8205 2.26051 8.1918 6,316.01
5. 0.0086 0.07622 53.4432
6. 2.408 0.2037 0.07992

1. 75 460 0.7
2. 70 460 7.5
3. 5 8,000 125
4. 1,250 125 1,492
5. 6,200 6,421.5 64,215
6. 3,150 48 4.8
7. 3.75 37.5 375
8. 3,750 375 7
9. 71,935 16,147 14,920
10. 26,718 267.18 2,671.8
11. 835.5 pounds
12. 8,605 pounds
13. 7 gallons
14. 24 minutes

1. 8.2 $0.69 2.76 0.112
2. 0.04 $1.50 0.203 $3.14
3. 4.16 $4.12 0.018 0.007
4. 1.5 $0.67 1.4

1. 4.8 5.29 0.003 $13.70
2. 29.9 6.2 $81 4.5
3. 2.06 0.7 $46

1. 0.5 $0.30 0.4 0.75
2. 0.375 0.25 0.2 0.5
3. 0.085 0.52 0.4 0.075

1. 0.168 0.787 4.164 6.209
2. 0.57 0.68 18.28 0.32
3. 0.3 0.7 0.2 0.4

1. 0.05 0.05 0.006
2. 0.05 0.0055 0.0061
3. 0.125 1.25 0.000125
4. 0.0125 0.125 0.0000125
5. 12.6515 3.4785 0.00036
6. 1.65 0.0165 0.00036
7. 0.1492 27.53 0.015
8. 0.01492 0.2753 0.0015
9. 64.215 6.4215 0.64251
10. 0.0375 0.375 3.75
11. $1.169
12. $0.15
13. 1.5 bushels
14. 19.5 miles per gallon
15. 2.675 kilowatts

1. $9\frac{9}{10}$, 9.9 $6\frac{14}{15}$, 6.93 (rounded) $3\frac{1}{10}$, 3.1
2. $1\frac{9}{20}$, 1.45 14, 14.0 $2\frac{3}{4}$, 2.75
3. $6\frac{9}{10}$, 6.9 $19\frac{19}{20}$, 19.95 20, 20.0
4. 0.35 mile, $\frac{7}{20}$ mile
5. No, 0.2 > 0.062

1. 92.65 or $92\frac{13}{20}$ cents
2. 1.0 or 1 mile
3. 3.9 or $3\frac{9}{10}$ miles
4. 0.3 or $\frac{3}{10}$ cent
5. 0.55 or $\frac{11}{20}$ mile
6. 0.7 or $\frac{7}{10}$ inch
7. 203.7 or $203\frac{7}{10}$ miles
8. 0.05 or $\frac{1}{20}$ inch
9. 15.65 or $15\frac{13}{20}$ inches

1. 64 64 120
2. 130 8 78
3. 4 2 11
4. 3 6 25
5. 414 3 128

1. 0.42 4.2 0.1 4.5 0.45 0.045 76.8 0.0144
2. 37.50 0.00210 0.01650 32.860 1,438.20
3. 22.5 225 2,250
4. $0.056 \times 2.5 = 0.14$ $2.25 \times 0.25 = 0.5625$
   $18.9 \times 1.1 = 20.79$
5. 0.6 0.04 0.003 60 200
6. 50 30 16 30 4
7. 0.5 0.45 0.875 0.3125 0.22
8. 3.52 0.186 0.036
9. 0.8 $0.33\frac{1}{3}$
10. 627 5

1. 8.60565 pounds
2. 3.2 feet
3. 2,674,000 watts
4. 64 miles
5. 92.3 meters
6. $4.20
7. $2,224.44
8. 216 mph
9. $63.35
10. 17.5 miles
11. $2.52

1. 0.1   0.625   1.2   2.75
2. $1\frac{1}{10}$ $1\frac{1}{2}$ $\frac{3}{4}$ $5\frac{1}{2}$
3. 18.82   6.309   1.608   40.317
4. 3.38   0.3168   259.64   0.9996
5. 0.05   36.96   8.4   0.166
6. 0.329   458   0.25   0.3125
7. 44   19   161   4
8. 225   2.25   22,500
9. 0.352   1.86   14,920
10. 18.5 mpg
11. 55.6 mph

Unit 4

1. ten thousand, seven hundred sixty-nine
2. 22   26   24   25   22   23   22   19   23
3. 85   124   154   92   106   109   180   90
4. 617   1,657   1,274   1,310   1,321   1,252
5. 7,492   13,492   10,132   10,768   14,462   14,837
6. 700   1,100   1,100   1,800
7. 4,099   412   4,065
8. 8,843 VCRs   9. 541,000 people

1. 9   7   7   12   9   9   7   8
2. 44   83   43   81   51   25   60   18
3. 36   59   84   12   48   47   59   88
4. 255   325   435   173   28   54   676
5. 2,530   4,110   4,122   6,548   54,917   26,773
6. 200   700   600   1,800
7. 771   456   45
8. 383 miles   9. 5,000 feet

1. 12   30   21   18   48   35   64
2. 205   248   249   80   216   100   168
3. 3,752   3,627   3,936   4,806   5,680   5,841
4. 448   250   1,064   1,120   5,220   800   810
5. 7,130   19,470   30,560   71,632   29,964   1,023,545
6. 2,800   4,000   400   10,500
7. 24,360   167,580   2,646
8. 127,500 sheets   9. 216,000 sheets

1. 8   9   8   4   7   9   6
2. 24   14   19   12   15   12   23
3. 91   31   71   32   31   60   30
4. 43 R1   59 R1   72 R5   47 R2   178 R2   84 R4   124 R1
5. 7   7 R11   5   6   8 R10   6 R64
6. 36 R17   205   59 R2   302   108 R56
7. 4   15   10
8. 108 screws   9. 250 miles

1. 4   4   4   3   3   8
2. 4   12   12   10   10   8
3. $\frac{3}{4}$ $\frac{2}{3}$ $\frac{3}{5}$ $\frac{1}{2}$ $\frac{3}{5}$ $\frac{2}{3}$
4. $\frac{3}{5}$ $\frac{3}{4}$ $\frac{3}{4}$ $\frac{1}{4}$ $\frac{1}{4}$ $\frac{1}{3}$
5. $1\frac{1}{5}$ $2\frac{1}{3}$ $2\frac{1}{2}$ $1\frac{1}{2}$ $1\frac{1}{2}$ $2\frac{3}{5}$
6. $1\frac{7}{8}$ $3\frac{1}{2}$ $2\frac{1}{4}$ 3   4   3
7. 1   1 $1\frac{1}{4}$ 1   1   1
8. $\frac{5}{6}$ $\frac{7}{8}$ $\frac{19}{21}$ $\frac{3}{4}$ $\frac{1}{2}$
9. $10\frac{1}{4}$ $14\frac{11}{24}$ $25\frac{5}{8}$ 9
10. $526\frac{1}{2}$ $133\frac{7}{10}$ $229\frac{5}{6}$ $142\frac{3}{8}$
11. $7\frac{1}{4}$ yards   12. $6\frac{3}{8}$ hours

1. 17   8   7   3   5
2. $\frac{1}{2}$ $\frac{1}{3}$ $\frac{1}{4}$ $\frac{1}{2}$ $\frac{2}{5}$ $\frac{1}{2}$
3. $\frac{13}{24}$ $\frac{1}{4}$ $\frac{7}{20}$ $\frac{1}{10}$
4. $63\frac{7}{12}$ $22\frac{3}{10}$ $27\frac{1}{3}$ $18\frac{1}{2}$
5. $7\frac{9}{20}$ $48\frac{5}{18}$ $169\frac{11}{24}$ $79\frac{1}{3}$
6. $18\frac{1}{3}$ $4\frac{3}{4}$ $8\frac{7}{8}$ $3\frac{7}{8}$
7. $8\frac{5}{6}$ $8\frac{20}{21}$ $17\frac{7}{12}$ $20\frac{11}{18}$
8. $1\frac{1}{4}$ miles   9. $2\frac{1}{4}$ pages

1. $\frac{4}{15}$ $\frac{5}{8}$ $\frac{2}{7}$
2. $\frac{7}{16}$ $\frac{3}{16}$ $\frac{9}{23}$
3. $3\frac{3}{4}$ 8 $16\frac{4}{5}$
4. $1\frac{1}{3}$ $1\frac{1}{2}$ $\frac{3}{5}$
5. $3\frac{3}{4}$ $1\frac{4}{5}$ $\frac{1}{2}$
6. $3\frac{5}{6}$ $\frac{5}{6}$ $1\frac{3}{4}$
7. $1\frac{3}{16}$ 2 $2\frac{1}{10}$
8. $5\frac{3}{5}$ 10 $6\frac{5}{6}$
9. $7\frac{1}{3}$ $2\frac{5}{8}$ $15\frac{1}{3}$
10. $\frac{2}{5}$
11. $\frac{1}{9}$

1. 2   3 $\frac{2}{3}$
2. 2 $\frac{8}{21}$ $\frac{5}{9}$
3. 8   10   12
4. 16   6 $\frac{1}{27}$
5. $1\frac{8}{9}$ $\frac{3}{8}$ $2\frac{1}{8}$
6. $11\frac{11}{15}$ $26\frac{2}{3}$ 26
7. 11 $33\frac{1}{3}$ $2\frac{1}{16}$
8. $5\frac{2}{3}$ $1\frac{67}{81}$ $1\frac{1}{5}$
9. $1\frac{29}{46}$ $1\frac{7}{8}$ $\frac{9}{10}$
10. 6 scarves
11. 21 people

1. five tenths; seven and one tenth; nine and thirty-five thousandths

2.	0.3	0.50				
3.	0.0015	0.015				
4.	5.5	5.05				
5.	5.005	5.0005				
6.	1,492.1492					
7.	0.1	0.5	0.25	0.75	0.3	0.7
8.	$\frac{1}{10}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{4}{5}$	$\frac{3}{4}$	$\frac{1}{4}$
9.	$1\frac{1}{2}$	$2\frac{1}{4}$	$3\frac{3}{4}$	$4\frac{1}{10}$	$7\frac{1}{2}$	$9\frac{3}{10}$
10.	1.5	2.25	3.75	7.1	4.3	2.4

11. Circle 0.4 and $\frac{4}{10}$, 0.5 and 0.50.
12. Circle 0.25 and $\frac{1}{4}$, 0.5 and $\frac{1}{2}$.
13. Circle 0.05, 0.3, 0.8, 0.4, 0.456.
14. Circle 1.5, 4, 1.7, 2.5, 3.1.
15. $13,846.40
16. $18.50

1.	385.477	2.094	389.695	$5.84	33.087
2.	$8.17	170.45	8.15	226.6	41.9
3.	2.60	0.0308	0.0075	0.96	0.000045
4.	8.998	8.00	861.0	1,272.96	0.33000
5.	0.6	1.2	0.15	1.5	$41.00
6.	7	35	0.25	2.22	1.5
7.	10	205.1	303.81	101	
8.	0.11	0.4	0.075	4.2	1.75
9.	125	125	125		
10.	1.25	0.0125	0.00125		

Mastery Test

1. 41
2. 313
3. 3,653
4. 751,333
5. 456,335
6. 25,467
7. 15,570
8. 8
9. 46
10. 854
11. 499
12. 177
13. 47,695
14. 63
15. 126
16. 782
17. 2,775
18. 42,672
19. 51,500
20. 9
21. 41
22. 32
23. 223
24. 304 R3
25. 215 R5

26. $1\frac{1}{8}$
27. $\frac{3}{4}$
28. $\frac{11}{12}$
29. 28
30. $31\frac{7}{8}$
31. $40\frac{5}{8}$
32. $46\frac{5}{6}$
33. $\frac{1}{2}$
34. $\frac{3}{8}$
35. $\frac{1}{12}$
36. $12\frac{3}{4}$
37. $11\frac{1}{3}$
38. $15\frac{7}{8}$
39. $1\frac{1}{2}$
40. $\frac{2}{5}$
41. $12\frac{1}{2}$
42. 21
43. 5
44. 8
45. $\frac{11}{24}$
46. 8
47. 3
48. $5\frac{1}{3}$
49. $10\frac{2}{3}$
50. 6

51. 0.9
52. 1.9
53. 344.62
54. 231.98
55. 6.916
56. $257.93
57. 280.6005
58. $0.50
59. 109.1
60. 197.5
61. 121.2
62. 9.004
63. 236.994
64. 0.36
65. 1.35
66. 0.0075
67. 0.0090
68. 0.00012
69. 8.4720
70. 0.5
71. 0.15
72. 0.03
73. 40
74. 500
75. 0.8

76. 12,225 pounds
77. 18,545,470 people
78. 8,354 feet
79. $5.49
80. $36.44
81. $60,900
82. 3,495.8 miles
83. 4 rows
84. 1,849 miles
85. $8\frac{3}{8}$ inches
86. $2\frac{1}{2}$ cups
87. $39\frac{3}{4}$ inches

88. $43\frac{3}{4}$ yards
89. $363
90. 225 miles
91. 5 yards
92. $2\frac{3}{4}$ yards
93. 7.19 inches
94. 921.2 miles
95. 2.87 inches
96. 1,922.77 miles
97. 78.537 pounds
98. 104.981 pounds
99. 18.6 miles per gallon
100. 72.5 miles per hour

BASIC ESSENTIALS OF MATHEMATICS: BOOK TWO - ANSWER KEY

1.	\$32	2.	\$6.40
3.	\$50	4.	\$37.20
5.	\$25	6.	\$6.25
7.	\$18	8.	\$28
9.	\$11.25	10.	\$99

1.	0.20	0.15	0.10	0.25	0.50	0.75
2.	0.30	0.40	0.12	0.18	0.22	0.27
3.	0.145	0.176	0.601	$0.33\frac{1}{2}$ or 0.355	$0.45\frac{1}{4}$ or 0.4525	$0.35\frac{2}{5}$ or 0.354
4.	0.90	0.80	0.70	0.65	0.95	1.00
5.	0.01	0.07	0.05	0.09	0.08	0.03
6.	10%	20%	30%	40%	50%	60%
7.	15%	25%	35%	45%	65%	75%
8.	12%	27%	43%	67%	90%	100%
9.	1%	5%	9%	7%	3%	8%
10.	10%	20%	30%	70%	90%	50%
11.	12.5% or $12\frac{1}{2}\%$	37.5% or $37\frac{1}{2}\%$	62.5% or $62\frac{1}{2}\%$	87.5% or $87\frac{1}{2}\%$	8.5% or $8\frac{1}{2}\%$	1.5% or $1\frac{1}{2}\%$

1.	50%	25%	75%	20%	40%
2.	60%	80%	30%	70%	90%
3.	37.5% or $37\frac{1}{2}\%$	62.5% or $62\frac{1}{2}\%$	87.5% or $87\frac{1}{2}\%$	3.125% or $3\frac{1}{8}\%$	15.625% or $15\frac{5}{8}\%$
4.	6.25% or $6\frac{1}{4}\%$	18.75% or $18\frac{3}{4}\%$	31.25% or $31\frac{1}{4}\%$	43.75% or $43\frac{3}{4}\%$	68.75% or $68\frac{3}{4}\%$
5.	$33\frac{1}{3}\%$	$11\frac{1}{9}\%$	$66\frac{2}{3}\%$		

1.	$\frac{1}{2}$	0.50	50%
2.	$\frac{1}{4}$	0.25	25%
3.	$\frac{3}{4}$	0.75	75%
4.	$\frac{2}{5}$	0.40	40%
5.	$\frac{3}{5}$	0.60	60%
6.	$\frac{1}{10}$	0.10	10%
7.	$\frac{7}{10}$	0.70	70%
8.	$\frac{1}{4}$	0.25	25%
9.	$\frac{3}{10}$	0.30	30%
10.	$\frac{5}{8}$	0.625	$62\frac{1}{2}\%$ or 62.5%
11.	$\frac{9}{20}$	0.45	45%
12.	$\frac{3}{20}$	0.15	15%
13.	$\frac{18}{25}$	0.72	72%
14.	$\frac{7}{50}$	0.14	14%
15.	$\frac{1}{25}$	0.04	4%
16.	$\frac{1}{20}$	0.05	5%
17.	$\frac{3}{20}$	0.15	15%
18.	$\frac{1}{5}$	0.20	20%
19.	$\frac{1}{8}$	0.125	$12\frac{1}{2}\%$ or 12.5%
20.	$\frac{3}{8}$	0.375	$37\frac{1}{2}\%$ or 37.5%
21.	$\frac{1}{3}$	$0.33\frac{1}{3}$	$33\frac{1}{3}\%$
22.	$\frac{2}{3}$	$0.66\frac{2}{3}$	$66\frac{2}{3}\%$
23.	$\frac{4}{5}$	0.80	80%
24.	$\frac{1}{12}$	$0.08\frac{1}{3}$	$8\frac{1}{3}\%$
25.	$\frac{5}{8}$	0.625	$62\frac{1}{2}\%$
26.	$\frac{7}{8}$	0.875	$87\frac{1}{2}\%$
27.	$\frac{4}{5}$	0.80	80%
28.	$\frac{9}{10}$	0.90	90%
29.	$\frac{7}{10}$	0.70	70%

1. 35%
2. 75%
3. 0.0725
4. $\frac{9}{25}$
5. 9.75% or $9\frac{3}{4}\%$
6. 17%
7. 0.055
8. 40%
9. 0.01
10. 0.995
11. 80%
12. 12%

1.	3	4	6	8	10
2.	1.50 = 1.5	1.25	1.75	1.99	5.00 = 5
3.	2.25	2.50 = 2.5	1.125	1.375	1.625
4.	3.10 = 3.1	3.375	3.8775	1.332	1.664
5.	1.01	1.60 = 1.6	1.05	1.20 = 1.2	2.02
6.	2.05	9.999	4.50 = 4.5	8.07	3.20 = 3.2
7.	6.09	7.255	11.00 = 11	1.013	1.7525
8.	2.10 = 2.1				
9.	1.52				
10.	3.33				
11.	1.35				
12.	1.16				
13.	3.00 = 3				

1.	0.005	0.0033	0.0025	0.006	
2.	0.004	0.0041	0.0005	0.0075	
3.	0.0025	0.004	0.006	0.008	0.00125
4.	0.00375	0.00625	0.00875	0.001	0.003
5.	0.007	0.009	0.003125	0.004375	0.0005
6.	0.009				
7.	0.0064				
8.	0.0055				
9.	0.45%				
10.	$\frac{56}{100}\%$ or 0.56%				
11.	$\frac{999}{1000}$, 99.9% or $99\frac{9}{10}\%$, 0.999				

James T. Shea, Basic Essentials of Mathematics: Book Two (Texas: Steck-Vaughn Co., 1991), pp. 119-120, 126.

1.	45	180	30	90	21
2.	96	60	18	12	11.25
3.	30	180	20	42	96
4.	250	54.45	100	60	70
5.	72	245	576	300	36
6.	45	43	67.5	18	9
7.	39	150	100	27	42.15

1. $3,250
2. $6,000
3. $7,200
4. $3,600
5. $4,800
6. $1,920
7. 200 cars
8. 30 pounds
9. 6.45 pounds
10. 0.344 pound

1.	4	$\frac{2}{3}$	3
2.	34	$1\frac{1}{3}$	9
3.	33	3	12
4.	$1\frac{1}{5}$	$4\frac{2}{3}$	15
5.	$3\frac{3}{8}$	8	5
6.	$2\frac{1}{4}$	14	$2\frac{4}{5}$
7.	9	36	$2\frac{39}{40}$

1. $10
2. $9
3. $26
4. $7
5. $20
6. $30
7. $40
8. $24.50
9. $7.50
10. $18.38
11. $18
12. $60

1. $2
2. $20
3. $5
4. $14
5. $30
6. $18
7. $20
8. $112.50
9. $40.50
10. $490
11. $89.60
12. $506

1. $312.12
2. $418.20
3. $525.31
4. $331.15

1. 491,520 people
2. $294,000
3. $106.04
4. $27,000
5. 1,845 people
6. 80 bushels
7. $9,275
8. 360 pounds

1. $2,625
2. 14 pounds
3. 13.6 quarts
4. $85.75
5. $68
6. 7.2 inches
7. 2,160 people
8. $20,825

1. $11,532
2. $83,220
3. $657.50
4. $3,798
5. $738
6. $30,080
7. $1,178

1.	68	125	40
2.	80	200	57,000
3.	55	200	13,000
4.	730	160	40
5.	200	7.5	20
6.	25	300	35
7.	200	90	900
8.	80	540	50

1. 720 families
2. $40,000
3. $20
4. 125 acres
5. $75,000
6. 360 acres
7. $36,000
8. 16 pounds

1. $12,400
2. $30
3. $18
4. $80
5. $1,000
6. $1,000
7. $10,000
8. $2,000

1. $500
2. $2,160
3. 200 acres
4. 2,400 people
5. $6,600
6. 13,000 miles
7. $450
8. 16 square yards
9. 1,250 people
10. 200 pounds

1.	20%	60%	7.5% or $7\frac{1}{2}$%
2.	15%	30%	4%
3.	45%	15%	85%
4.	67%	80%	80%
5.	$10\frac{2}{3}$%	37.5% or $37\frac{1}{2}$%	75%
6.	12%	20%	40%
7.	12.5% or $12\frac{1}{2}$%	10%	87.5% or $87\frac{1}{2}$%
8.	25%	$66\frac{2}{3}$%	35%

1. 20%
2. 40%
3. 75%
4. 25%
5. 10%
6. 25%
7. $33\frac{1}{3}$%
8. 12.5% or $12\frac{1}{2}$%

1. 33
2. 32
3. 25
4. 108
5. 1
6. 10
7. 200
8. 80
9. 35
10. 8.5
11. 80
12. 13.5
13. 0.5
14. 505
15. 5
16. 2
17. 2
18. 9
19. 160
20. $10.75
21. 9
22. 9
23. 24
24. 40
25. 21
26. 25
27. 0.66
28. 200
29. 10
30. 20
31. 250
32. 17
33. 0.17
34. 40
35. 14%
36. $194.22

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1. 13 21 3 5
2. 8 4 16 9
3. 7 $3\frac{3}{7}$ 5 18
4. 27 6 27 2
5. 100 8 256 625
6. 21 in. 7. length = 400 in., width = 300 in.
8. A (1, 1) E (−7, 0)
B (−2, −3) F (−3, 3)
C (6, −1) G (4, −8)
D (0, 7)

1. 17% 10% 25% 62.5% or $62\frac{1}{2}$% 37.5% or $37\frac{1}{2}$% 150% 1%
2. 0.15 0.001 0.25 0.20 0.125 0.01 1.25
3. 0.05, $\frac{5}{100} = \frac{1}{20}$ 0.47, $\frac{47}{100}$
4. 5 90 15%
5. \$4.50 6. \$13.50 7. \$130.36
8. \$57 9. \$2,311.04 10. \$15.20
11. \$932.50 12. \$2,120 13. 60%

1. \$16 \$19.50 \$17.50
2. \$25 \$4.88 \$43.88
3. \$28.13 \$6.75 \$6.65
4. \$12.50 5. \$104.04
6. \$1,273.08 7. \$945
8. \$140 9. \$200

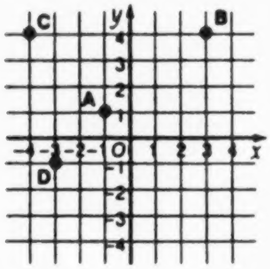
1. 144 19 9
2. 28,200 78 590
3. 30 52 20
4. 600 17,800 940
5. 156 14,400 300
6. 14 30 441
7. $8\frac{1}{8}$ $6\frac{1}{4}$ $1\frac{1}{2}$
8. 7.4 0.0193 1.32
9. $2\frac{1}{2}$ $2\frac{2}{3}$ 9
10. 7.1 0.0135 0.9
11. 6 3 9
12. 36 2 $6\frac{1}{2}$
13. 300 ft 14. 260 grams
15. 5 lb 1 oz 16. 26 packages
17. 100,000 centimeters 18. 92.3 meters
19. 900 centimeters 20. \$0.23

1. $1\frac{1}{2}$ gallons 2. \$1,600
3. 3,500 square feet 4. \$285
5. 128 cubic ft 6. 384 bushels
7. $69\frac{1}{7}$ ft 8. $125\frac{5}{7}$ square feet
9. 6,160 or 6,157.54 cubic feet 10. 15 meters

1. \$250 5. $14\frac{2}{7}$%
2 \$10.26 6. $12\frac{1}{2}$%
3. \$10,400 7. 50%
4. \$3,000 8. 20%

1. 3 −12 −2 −11
2. −48 88 −25 −12
3. 9 1,000 5 6
4. 9*k* 9*m* −3*ab* 7*n*
5. 3 6 2
6. 15 2 3
7. 60 ft
8. 5 ft
9. 12 ft
10. 18
11. 12 in., 16 in.
12. 70 degrees
13. A (−3,3)
B (4,1)
C (1, −3)
D (−2, −2)

14.



1. $\frac{10}{40} = \frac{1}{4}$
2. $\frac{10}{50} = \frac{1}{5}$
3. \$100, \$150, \$200 4. 45°, 60°, 75°
5. \$60, \$120, \$180 6. $6\frac{2}{3}$ feet
7. $\frac{9}{14}$ 8. $13\frac{1}{3}$ miles
9. 14 6 3 2
10. 20 3 4 3
11. 7 $5\frac{1}{3}$ 18 $28\frac{1}{2}$

MASTERY TEST

1. 50%
2. 75%
3. 37.5% or $37\frac{1}{2}$%
4. 0.0025
5. 0.60 = 0.6
6. 0.875
7. $\frac{3}{400}$
8. $\frac{2}{5}$
9. $\frac{5}{8}$
10. 42
11. 330
12. \$116.40
13. 224,185,250
14. \$400
15. \$9,630
16. \$110.25
17. 9,000 miles
18. \$37.50
19. \$18
20. \$23,000

NUMBER POWER 6: WORD PROBLEMS - ANSWER KEY

Word Problem Review

1. d.

$$\frac{\text{cocoa}}{\text{chocolate}} = \frac{\text{cocoa}}{\text{chocolate}}$$

$$\frac{3\text{ tablespoons}}{1\text{ ounce}} = \frac{n\text{ tablespoons}}{12\text{ ounces}}$$

$1 \times n = 3 \times 12 = 36$ tablespoons

(1 tablespoon fat is unnecessary information.)

2. a.

$$\frac{\text{liquid}}{\text{corn syrup}} = \frac{\text{liquid}}{\text{corn syrup}}$$

$$\frac{\frac{1}{4}\text{ cup liquid}}{1\text{ cup corn syrup}} = \frac{n\text{ cup liquid}}{1\frac{1}{2}\text{ cups corn syrup}}$$

$1 \times n = \frac{1}{4} \times 1\frac{1}{2}$

$n = \frac{1}{4} \times \frac{3}{2} = \frac{3}{8}$ cup

3. c.

$$\frac{\text{part}}{\text{whole}} = \frac{\text{percent}}{100}$$

$$\frac{25\text{ square inch}}{400\text{ square inch}} = \frac{n\%}{100}$$

$400 \times n = 25 \times 100$

$n = \frac{2{,}500}{400} = 6\frac{1}{4}\%$

4. d.

$$\frac{\text{pounds}}{\text{bushel}} = \frac{\text{pounds}}{\text{bushel}}$$

$$\frac{48\text{ pounds}}{1\text{ bushel}} = \frac{12\text{ pounds}}{n\text{ bushels}}$$

$48 \times n = 1 \times 12$

$n = 12 + 48 = \frac{1}{4}$ bushel

5. c.

$$\frac{\text{concrete}}{\text{square feet}} = \frac{\text{concrete}}{\text{square feet}}$$

$$\frac{1.23\text{ cubic yards}}{100\text{ square feet}} = \frac{n\text{ cubic yards}}{550\text{ square feet}}$$

$100 \times n = 1.23 \times 550$

$n = 676.50 + 100 = 6.765$ cubic yards

(4 inches of concrete is not necessary information.)

6. c.

conversion: (1 dozen eggs = 12 eggs)

$$\frac{1\frac{1}{2}\text{ pounds}}{12\text{ eggs}} = \frac{n\text{ pounds}}{8\text{ eggs}}$$

$12 \times n = 1\frac{1}{2} \times 8$

$n = \frac{3}{2} \times 8 \times \frac{1}{12} = \frac{24}{24} = 1$ pound

7. b.

total bill − air conditioning = bill without air conditioner

\$86.29 − \$59 = \$27.29

Kenneth Tamarkin, Number Power 6: Word Problems (Chicago, Contemporary Books, Inc., 1983), pp. 167-170.

Word Problem Review continued

8. a.

$\frac{\text{part}}{\text{whole}} = \frac{\textit{percent}}{100}$

missing information: 80% − 70% = 10%

$\frac{n}{\$18{,}657} = \frac{10}{100}$

100 × *n* = *10* × $18,657

n = 186,570 ÷ 100 = $1,865.70

9. d.

original gallons − *gallons delivered* = gallons left

missing information:

deliveries × gallons per delivery = gallons delivered

7 deliveries × 364 gallons = 2,548 gallons delivered

9,008 gallons − *2,548 gallons* = 6,460 gallons left

10. a.

charge per member × number of members = total collected

missing information:

dues + magazine = charge per member

$10 + $5 = $15

$15 × 13,819 members = $207,285

11. a.

P. original + N.Y. original + G. original = total value

$1,343 + $658 + $3.98 = $2,004.98

12. e.

original value − *value lost* = 5 year value

missing information:

$\frac{1}{3}$ original value + $\frac{1}{4}$ original value = value lost

$\frac{1}{3}$ × 3,600 + $\frac{1}{4}$ × 3,600 = value lost

1,200 + 900 = $2,100

3,600 − 2,100 = $1,500

13. c.

original cost per tool set − price of last set = money lost on last set

missing information:

total cost for sets ÷ number of sets = original cost per tool set

$540.60 ÷ 15 tool sets = $36.04

$36.04 − $24 = $12.04

14. b.

total weekly earnings × number of weeks = gross yearly earnings

missing information:

money taken out + take home pay = total weekly earnings

$48.23 + $132.77 = $181

$181 × 52 weeks = $9,412

15. a.

total tablets − *tablets taken* = tablets left

missing information:

tablets per day × number of days = tablets taken

4 tablets per day × 30 days = 120 tablets taken

250 tablets − *120 tablets* = 130 tablets

16. b.

total aid ÷ number of students = aid per student

missing information:

last year's aid − decrease = total aid

$1,126,200 − $462,000 = $664,200

$664,200 ÷ 820 students = $810

17. b.

profit ÷ number of women = profit per woman

missing information:

earnings − expenses = profit

$36,460 − $23,188 = $13,272

$13,272 ÷ 4 women = $3,318

18. b.

$\frac{\text{168 miles}}{\text{5.6 gallons}} = \frac{\text{417 miles}}{n \text{ gallons}}$

168 × *n* = 5.6 × 417

n = 2,335.2 ÷ 168 = 13.9 gallons

19. d.

$\frac{\text{5 tablespoons}}{\text{2 cups}} = \frac{n \text{ tablespoons}}{\text{24 cups}}$

2 × *n* = 5 × 24

n = 120 ÷ 2 = 60 tablespoons

20. e.

total weight ÷ weight per book = number of books

34.2 pounds ÷ .6 pound = 57 books

21. b.

total children − children not in public school = children in public school

5,372 children − 1,547 children = 3,825 children

22. a.

closed stations + remaining stations = last year's stations

423 stations + 2,135 stations = 2,558 service stations

23. c.

feet in a mile × number of miles = total number of feet

missing information:

feet in a yard × yards in a mile = feet in a mile

3 feet × 1,760 yards = 5,280 feet

5,280 feet × 5 miles = 26,400 feet

24. c.

weekend's hot dogs − Saturday's = Sunday's hot dogs

426 hot dogs − 198 hot dogs = 228 hot dogs

25. b.

original price − *reduction* = sale price

missing information:

fraction × original price = reduction

$\frac{1}{3}$ × *$96 = $32*

$96 − *$32* = $64

26. d.

sale price + reduction = original price

$95 + $47 = $142

27. c. $148

original amount + *change* = new amount

missing information:

deposit − check = change

$115 − $28 = $87

$61 + *$87* = $148

28. c.

original weight − weight loss = new weight

$172\frac{1}{2}$ pounds − $47\frac{3}{4}$ pounds = $124\frac{3}{4}$ pounds

29. d.

original weight + first month + second month = new weight

104 pounds + 3 pounds + 4 pounds = 111 pounds

30. d.

$$\frac{n \text{ undecided}}{\text{total people}} = \frac{\text{percent undecided}}{100\%}$$

missing information:

100% in favor − (in favor + against) = percent undecided

100% − (68% + 25%) = 7%

$$\frac{n}{\text{1,400 people}} = \frac{7}{100}$$

100 × *n* = 7 × 1,400

100 *n* = 9,800

n = 98 people

31. b.

original balance − *total checks* + deposit = new balance

missing information:

first check + second check = total checks

$46.19 + $22.45 = $68.64

$74.81 − *$68.64* + $60.00 = $66.17

32. d.

cost of socks + cost of towels = total spent

cost per sock × number of socks = cost of socks

$1.79 × 3 socks = $5.37

cost per towel × number of towels = cost of towels

$2.69 × 4 towels = $10.76

$5.37 + $10.76 = $16.13

33. b.

dinner + movie + babysitter = cost of evening

$14.43 + $3.50 + $5.00 = $22.93

34. b.

passengers per jet × number of jets = total passengers

214 passengers × 96 jets = 20,544 passengers

35. c.

total price − rebate = total paid

missing information:

list price + added options = total price

$6,578 + $435 = $7,013

$7,013 − $650 = $6,363

36. a.

$$\frac{\textit{field goals}}{\text{field goal attempts}} = \frac{\textit{scoring percentage}}{\textit{100\%}}$$

missing information:

field goal attempts − misses = field goals

25 field goal attempts − 7 misses = 18 field goals

$$\frac{\textit{18 field goals}}{\text{25 field goal attempts}} = \frac{n}{100}$$

25 × *n* = *18* × 100

n = 1,800 ÷ 25 = 72%

37. c.

$$\frac{\text{432 male workers}}{\text{total work force}} = \frac{\textit{percent male workers}}{100\%}$$

missing information:

100% workforce − percent female = percent male

100% − 28% = 72% male

$$\frac{432}{n} = \frac{72}{100}$$

72 × n = 432 × 100

n = 43,200 ÷ 72 = 600 workers

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38. b.
weight per Chevrolet × number of Chevrolets = total weight
1,600 pounds × 840 Chevrolets = 1,344,000 pounds

39. c.
weight of carton ÷ number of nails = weight per nail
$\frac{3}{4}$ pound ÷ 75 nails = $\frac{3}{4} \times \frac{1}{75} = \frac{1}{100}$ pound = .01 pound

40. b.
total cost per girl × number of girls = total collected
missing information:
cost to get in + cost of skates = cost per girl
\$.75 + \$.50 = \$1.25
\$1.25 × 19 girls = \$23.75

41. d.
conversion: (1 dozen = 12 oranges)

$$\frac{\$1.50}{12 \text{ oranges}} = \frac{\$n}{4 \text{ oranges}}$$

$12 \times n = 1.50 \times 4$
$n = 6.00 \div 12 = \$.50$

42. a.
fraction (of) × total representatives = votes
$\frac{2}{3} \times 435 = 290$ votes

43. c.
total homes ÷ number of people = homes per person
948 homes ÷ 12 people = 79 homes

44. c.

$$\frac{\$684}{\$3,600} = \frac{n \text{ percent}}{100}$$

$3,600 \times n = 684 \times 100$
$n = 68,400 \div 3,600 = 19\%$

45. a.

$$\frac{\$n}{\$260} = \frac{20}{100}$$

$100 \times n = 20 \times 260$
$n = 5,200 \div 100 = \$52$

46. c.

$$\frac{\$1.79}{1 \text{ pound}} = \frac{\$1.06}{n \text{ pound}}$$

$1.79 \times n = 1 \times 1.06$
$n = 1.06 \div 1.79 = .59$ pound

47. b.

$$\frac{1\frac{1}{4} \text{ pound}}{\$7.80} = \frac{1 \text{ pound}}{\$n}$$

$\frac{5}{4} \times n = 7.80$
$n = 7.80 \times \frac{4}{5} = \$6.24$

48. a.
girder weight × number of girders = total weight
$\frac{7}{8}$ ton × 600 = 525 tons

49. c.
container size ÷ serving size = number of servings
9 pounds ÷ $\frac{1}{16}$ = 144 sundaes

50. b.
tile − size needed = size cut off
$\frac{3}{4}$ foot − $\frac{1}{3}$ foot = $\frac{5}{12}$ foot

TEST-TAKING

TEST TAKING

To The Student,

The test taking information included in this packet is designed to help you deal comfortably and skillfully with the GED test. When you have finished the reading and the exercises in your GED books and in the study packets and are ready to take your GED test, we want you to be prepared thoroughly for this testing experience. Knowing what to expect when you get to the test should help to relieve some of the apprehension and anxiety you may be feeling about the test.

The information included in this packet contains a variety of test taking tips, including specific tips for the GED test. We hope you will read everything carefully and use the information to your advantage. Being thoroughly prepared to take the GED test will increase your confidence and help you to develop a strong, positive attitude.

At this point, you should be ready to practice test. The practice test is designed to give you an idea of what the GED test will be like and to test your readiness to take the GED test.

The practice test is half the number of questions and half the time of the GED test. The GED test is approximately 7 1/2 hours, the practice test is approximately 3 1/2 - 4 hours. All 5 subject areas are included in the practice test as well as a practice essay. The results of the practice test are extremely important. From these scores, we can either recommend to you that you are definitely ready to take the GED test or recommend to you that you spend some additional time studying and reviewing. The results of the practice test may also indicate that you are ready to test in some areas but may need a little more study and preparation in other areas.

When you have completed the course of study, you will need to call the Adult Education and Job Training Center at 248-4942 to schedule an appointment to take the practice test. The practice test is administered only at the Adult Center, so you will need to make arrangements to come to the Center to take the practice test. After you have taken the practice test, you will meet with either the GED program coordinator, Carol Molek, or the home study coordinator, Barb Goss, to discuss your practice test scores and to make a determination of test readiness.

GED TEST TAKING TIPS

GENERAL INFORMATION

1. Read and follow ALL directions carefully. Read the entire set of directions before beginning any of the test questions. The directions on the GED test are carefully prepared to help you complete each test item correctly. Don't try to "outsmart" the directions with shortcuts or tricky formulas; those shortcuts usually shortchange you! Consider each test item as an individual challenge and follow the steps given in the directions.

2. Try to be flexible. Be ready to move easily and quickly from one type of test item to another. Different types of readings and different types of questions will be intermingled. You will need to be able to change from one thought process to another with each new question.

3. Budget your time wisely. Plan to keep up a steady pace, but do not rush! Most people are able to complete all test questions comfortably in the amount of time allotted for each section of the GED. If you are concerned whether you can work quickly enough, time yourself when you practice at home on the simulated tests. If you find yourself taking more than the allotted time, you may be reading too slowly and allowing your mind to wander. Reading at a little quicker pace (but NOT rushing) may solve the problem and improve your concentration.

4. If you complete the test questions before the end of allotted time, go back and double check your answers. Since there is NO penalty for guessing, make sure you give an answer for every question, and that includes those questions you are not sure about.

5. The thorough preparation that you are giving yourself is your BEST guarantee of success. Knowing that you are well prepared will give you CONFIDENCE. Last minute cramming is NOT advisable. You want to be relaxed, and cramming can actually make you tense and block your thinking. Careful preparation and confidence will work together toward a good, solid score on the GED test.

GED TEST-TAKING TIPS

1. **Prepare physically.** Get plenty of rest and eat a well-balanced meal before the test so that you will have energy and will be able to think clearly. Last-minute cramming will probably not help as much as a relaxed and rested mind.

2. **Arrive early.** Be at the testing center at least fifteen to twenty minutes before the starting time. Make sure you have time to find the room and to get situated. Keep in mind that many testing centers refuse to admit latecomers.

3. **Think positively.** Tell yourself you will do well. If you have studied and prepared for the test, you should succeed.

4. **Relax during the test.** Take half a minute several times during the test to stretch and breathe deeply, especially if you are feeling anxious or confused.

5. **Read the test directions carefully.** Be sure you understand how to answer the questions. If you have any questions about the test or about filling in the answer form, ask before the test begins.

6. **Know the time limit for each test**. The math test has a time limit of 90 minutes.

Some testing centers allow extra time, while others do not. You may be able to find out the policy of your testing center before you take the test, but always work according to the official time limit. If you have extra time, go back and check your answers.

For this 56-question test, you should allow about one and a half minutes per question. However, this is not a hard and fast rule. Use it only as a guide to keep yourself within the time limit.

7. **Have a strategy for answering questions.** Read each question carefully; reread it if you are having trouble understanding what is being asked of you.

8. **Don't spend a lot of time on difficult questions**. If you're not sure of an answer, go on to the next question. Answer easier questions first and then go back to the hard questions. However, when you skip a question, be sure that you have skipped the same number on your answer sheet. Although skipping difficult questions is a good strategy for making the most of your time, it is very easy to get confused and throw off your whole answer key.

Lightly mark the margin of your answer sheet next to the numbers of the questions you did not answer so that you know what to go back to. To prevent confusion when your test is graded, be sure to erase these marks completely after you answer the questions.

9. **Answer every question on the test.** If you're not sure of an answer, take an educated guess. When you leave a question unanswered, you will always lose points, but you can gain points if you make a correct guess.

If you must guess, try to eliminate one or more answers that you are sure are not correct. Then choose from the remaining answers. Remember, you greatly increase your chances if you can eliminate one or two answers before guessing. Of course, guessing should be used only when all else has failed.

10. **Clearly fill in the circle for each answer choice.** If you erase something, erase it completely. Be sure that you give only one answer per question; otherwise, no answer will count.

11. **Practice test-taking.** Use the exercises, reviews, and especially the posttest in this book to better understand your test-taking habits and weaknesses. Use them to practice different strategies such as skimming questions first or skipping hard questions until the end. Knowing your own personal test-taking style is important to success on the GED.

TIPS FOR TEST TAKERS

GET READY, GET SET, GO!

Gawking at the textbook lying open on his desk, he wipes away the beads of perspiration that outline his upper lip and tosses another jelly bean into his mouth. It is the last one from a giant jar that an hour ago had been full to the brim. The jelly bean is a black one. He dislikes black jelly beans - never eats them. But, being in an irregular frame of mind, he takes it anyway.

His stomach churns as if it has been fed a peck of green apples rather than a giant jar of jelly beans. He turns his attention to his fingernails. The nails are already to short to chew. He quickly finds a comforting substitute for chewing his nails. Drumming "God Bless America" on his desk with the accompaniment of his cracking gum, he watches the smoke soldiers arising from the ashtray to battle on the field of sunlight. An idling brain is easily satisfied.

His fifth cup of coffee moves him into the bathroom for another encore. He walks on quaking feet and knocking knees back to his seat before the knowledge on his desk. Alone against the world, he again tries to turn his mind to studying for tomorrow's test.

Understandably, the dirtiest word in any student's vocabulary is "test." When tests loom, students often become uptight. This is due, in part, to every student's ability to make easy things hard. But test stress and its accompanying distress can be diminished. It is when the following tips become habits that a terrified test taker will evolve into a master test taker.

A. Getting Ready

1. The business of a student is to know what material a test will cover and to study that material. Test readiness is a by-product of studying, studying, studying...and plenty more studying. A student who daily makes the time to study should expect to do well on tests. Daily study, more importantly, will enlarge the general knowledge store and enhance future learning. Cramming on the eve of a test is a practice of shortsighted students. Passing a test is the major goal of these students. Unfortunately, material that is crammed is often quickly forgotten. A first-rate student will not be trapped in the cram crunch. To properly prepare for a test, anticipate test questions; seek answers to those questions; build a reserve of facts, figures, and information; and learn a few new facts just to know the good feeling that overcomes the body when the brain is amused.

1981 by Elaine C. Frantz, Lebanon, PA

2. The night before the test, do not study long, if at all. Participate in a mild physical activity, giving your mind an opportunity to relax and unreel itself.

Get a good night's sleep, insuring that both body and mind will be in the best working order on the day of the test.

3. As the hour of the test approaches, allow more than ample time to dress for and travel to the test. Charging about in a rush to get ready will, most certainly, lead to panic. Panic must be avoided; it dulls the thinking. Savor a nutritional meal before going to the test. The treat will be invigorating for your mind, and all systems (including the brain) operate most smoothly when they are supplied with food energy.

4. Recollect and collect all supplies: a watch to help budget time; glasses, if necessary for reading; two or three sharpened pencils with erasers; and all other items that are essential. Chewing gum, hard candy, and cigarettes, although not necessarily essential, may be desired supplies.

5. Arriving at the classroom door a bit early on the day of the test is a helpful practice. Afford yourself time for psychological preparation. Before walking into the classroom, take three very deep breaths, square the shoulders, and remember that a well-prepared student does well on a test.

B. Getting Set

1. Pay particular attention to all of the instructions given by the teacher. If any direction is unclear, ask the teacher for a further explanation.

2. Before taking pencil in hand skim through the entire contents of the test. Decide how much time can be spent on each section.

3. If easy questions count as much as difficult questions, complete the easy questions first. Place a check mark beside any questions that appears difficult on first reading. It is wise to return to these questions after the pretest nervousness has eased. Minus the strain of nervousness the mind functions better. Questions that initially appeared so difficult are often more readily answered the second time around.

4. Read each and every word in the questions and each and every word in the possible answers if the test is of the multiple choice variety. Do not guess what a question asks after reading only the first few words. Important words - words not to be overlooked - can be placed near the end of almost any sentence.

5. If you cannot choose the correct answer, eliminate all possible answers which you are sure are wrong. When you review remaining possible answers, the odds for identifying the correct answer are more favorable.

6. If the correct answer still remains a mystery, despite all the favorable odds, then by all means, guess. The need to guess probably won't arise often.

7. Make use of any remaining time by checking the contents of your test paper. So what if you're the last one finished? You may have avoided unnecessary errors.

C. Getting Going

The time is now to get going. Practice these tips, make them habits, and you are on your way to success. Along the way remember these words of insight:

> *I do detest to take a test,*
> *but always manifest my best.*
> *I jest of unrest in my stomach*
> *and congestion in mind.*
> *I'm full of zest. Having kept abreast,*
> *I invest in my digesting.*

TAKING STANDARDIZED TESTS - GENERAL ADVICE

1. Get a good night's sleep.
2. Get up an hour earlier so you will be alert.
3. Eat a good breakfast.
4. If your wear glasses, take an extra pair. Take contact lens fluid and cleaner if you wear contact lenses.
5. If you will work on an answer sheet graded by a computer, take several sharpened #2 pencils with you.
6. Take advantage of all breaks given between test sections. Do not socialize with your friends during breaks.
7. If you become tired or find your attention wandering, take a 10-30 second break to help you stay alert.
8. Wear a watch.
9. Note exactly when the test starts and jot down when you are supposed to be finished.
10. Panic is your mortal enemy. Common sense and good judgement are the best qualities you can bring to the test.

DURING THE TEST

1. Read the directions first.
2. Take the test THREE times. That is:
   a. First - Look over the test, check on the number and types of questions, and apportion your time.
   b. Second - Answer the questions you know readily.
   c. Third - Attempt to answer the questions you had trouble with.
3. NEVER LINGER OVER A QUESTION WHICH STUMPS YOU. COME BACK TO IT LATER.
4. Read all your choices.
5. Do not immediately decide that the first choice which looks attractive is the correct one. Put a dot (.) by it and consider the other alternatives.

From: The Parent/Student Study Skills Connection, Carol S. Molek, Project Director/Director/Coordinator (Lewistown: TIU Adult Education and Job Training Center, 1989-1990), pp. 174-179, 217-222.

6. If you can work one type of question most easily, do that type first.

7. Frequent erasing may be a sign of insecurity. Nine out of ten times your first choice is correct.

8. If you are working on an answer sheet, use these techniques:

   a. Do not doodle or put extra marks on the sheet. The computer can grade an extraneous mark as an error.

   b. Put your answers in the right place. Make sure #6 is in the row designated as #6, not #5 or #7.

   c. Be certain that you put the answer in the correct column.

   d. If you erase, make your erasure first, then record your new answer. Thus, you will not have two shaded areas for the same question and be penalized.

9. CHECK YOUR ANSWERS!

TAKING OBJECTIVE TESTS AND EXAMINATIONS

Objective tests include:

1. Short-answer test (of recall)

   Example: William Shakespeare was born in _____ at _____.

2. True and false

   Example: Peas are classified as legumes. True False

3. Multiple choice

   Example: Abraham Lincoln sponsored:

   a. The Declaration of Independence
   b. The Emancipation Proclamation
   c. The Taft-Hartley Bill
   d. The Missouri Compromise

   Answer: b

4. Matching questions

   Example:

   1. Trust-busting President
   2. Author of Oliver Twist.
   3. The Douglas Debates
   4. Father of Isaac
   5. Prime Minister during WWII

   3 Lincoln
   4 Abraham
   2 Dickens
   1 T. Roosevelt
   5 Churchill

TEST TIPS

1. Answer the questions you know first. Come back to any on which you wish to spend more time.
2. Wear a watch. Budget your time. Jot down when your allotted time will be up.
3. Pay attention to mechanical instructions that indicate WHERE and HOW to answer questions.
4. Read the questions and answer choices carefully.
5. Determine how the test is to be scored. Find out if certain items are weighted. That is, Part I with 30 questions counts 40%, but Part II with 20 questions counts 60%, spend more time on Part II. (If you have 50 minutes for the test, spend only 20 minutes on Part I and 30 minutes on Part II.)

6. Guessing - Always guess if there is no penalty. Do not guess if there is overcorrection for guessing.

7. Re-read the entire test. Do not change answers unless you are reasonably certain that the original answer is incorrect.

8. Observe all qualifying words - Note broad, categorical words like all, usually, always, never, totally, no, and unique, which often indicate the choice is wrong.

9. Use the process of elimination. Put an "X" through an obviously wrong answer. Use this technique particulary in matching tests.

10. Be careful to notice the negative completion option. Write "T" by all answers you know are true, so you can select the correct one by elimination.

Directions: All statements are correct EXCEPT one. Identify the incorrect statement.

Example: All these states belonged to the original 13 colonies EXCEPT:

a. Rhode Island
b. Pennsylvania
c. Texas
d. New York
e. Virginia

Answer: c

Remember: You are looking for the WRONG answer.

11. Use clues.

A. Grammar

(1) Singular/plural verbs

Example: Which of the following hormones are steroids?

a. estrogen
b. progesterone
c. testerone
d. all of the above

Answer: D The verb ARE indicates a plural answer.

(2) Indefinite articles "a" or "an"

Example: An example of a bivalve is an

a. mole
b. beaver
c. oyster
d. cat

Answer: C "an" must precede a word beginning with a vowel.

B. The correct answer may be the one which is:

(1) The longest or shortest in the series.

(2) In greater detail.

(3) In wording similar to the stem of the question.

C. The incomplete sentence when read with the answer choice should make grammatical, logical sense.

Example: The event which led to America's entrance in World War II was:

a. hostility towards Japan
b. Japan's bombing Los Angles
c. the attack on Pearl Harbor
d. the sinking of the Maine

Explanation: Choice "a" is incorrect because it does not describe an event, so you can eliminate it. Answer: c

D. Look for a converse pair. One of the pair may be correct.

Example: In The Call of the Wild, Buck, the dog,

a. gets rabies
b. dies
c. becomes very tame
d. has a litter of puppies
e. becomes a wild animal

Answer: The answer may be "c" or "e" because they are a converse pair or direct opposites. The correct answer is "e."

E. In multiple-response questions use the process of elimination. Decide which alternatives are true; then narrow down the choices. Draw a line through the false answer (s).

Example: The city of London

a. is larger than Tokyo
b. is the home of Parliament
c. is the city in which Buckingham Palace is located

Answer: (1) a only (2) b & c (3) a,b, & c
(4) c only (5) a & c

Because you know "a" is wrong, you can eliminate answers (1), (3), and (5). You have narrowed your choices to (2) and (4), a good guess.

Correct answer: (2)

12. Use the content of other test items and answer choices to help you select the correct alternative. Let one answer remind you of another.

HOW TO DO YOUR BEST ON ANY KIND OF TEST *

Testwise students use most of the following general test-taking strategies without thinking. With a bit of thinking, you can make them part of your bag of test tricks.

Strategy 1: Get The Most Credit In The Least Time

Time isn't always a problem in taking tests. But you should find out at the beginning whether or not it might be. If it is, then you need a plan to make the best use of your time.

Tactic 1: Decide whether to speed or not to speed

Take a minute to skim the test. Decide whether it's a speed test or an accuracy test. Most standardized tests are speed tests; only the very few top performers are expected to be able to finish the test. On the other hand, most course tests are accuracy tests; the tester expects that everyone who is a C student or above will be able to finish the test without rushing.

Tactic 2: Budget your time

Right at the beginning, allocate your time. And stick to your allocations! Standardized tests often do this for you by giving you fifteen or twenty minutes for each section, after which you're supposed to go on to the next section. You will actually answer the most questions, and get a higher score if you follow those instructions. Since speed-test preparers don't expect most people to get to every question, don't be thrown if you don't complete each section.

For course tests, divide up your time according to how many points each item is worth. For example, if one question or one section is worth 50 percent of your score, plan to spend half your time on it. (Of course, if you don't use the entire time allotted for any particular question, move on to the next one right away.)

Tactic 3: Take the easy questions first

If you don't have to answer questions in order, and there are relatively few questions on the test, pick out the easy ones. Get them out of the way first. This will calm your anxiety and, at the same time, get your memory working smoothly. But don't waste time trying to sort out the difficult questions from the easy ones; allow yourself no more than a few minutes.

Tactic 4: Read all the essay questions in advance

On essay tests in which you can choose, say, three out of five questions, read all the choices first. Then make your selection based on which ones you can answer best within the allotted time. If you have to choose four, for example, but only know answers for three of them, go ahead and write those three. Then review the remaining possibilities. Writing the three essays may have triggered enough of your memory to allow you to do a good job on one other topic.

* Judi Kesselman - Turkel and Franklyn Peterson, Test-Taking Strategies (Illinois: Contemporary Books, Inc., 1981), pp. 25-35.

Tactic 5: Leave the time-wasters for last

If you seem to be taking too much time on one particular question, stop working on it. Mark it so that you'll be able to find it easily after you've tackled the other questions. Then move on. If you have time left over at the end of the test, you can go back to the marked questions; by that time another question or answer may have sparked your memory on the earlier problem. If you don't have leftover time, you will have scored more points for correctly answering twelve questions that came easily to you than only nine that you sweated over.

Avoid skipping too many questions, because rereading them will also waste time. We suggest that you try not to skip more than one out of every ten questions.

Tactic 6: Check your watch

Look at your watch at sensible intervals to make sure you aren't falling behind. One workable plan is to check the time after every test section, another to look after every quarter of the test is finished. If you know from past tests that you tend to be slow, start by checking the time more frequently; that can help you develop a quicker rhythm. But don't let worry about time distract you from concentrating on the answers.

Tactic 7: Use all the time

Students who walk out of the test room early are often cheating themselves out of time they could use to good advantage. Reread the questions as well as your answers. Check for accuracy, legible writing, and questions you may have missed. Erase stray marks on machine-scored tests. On standardized tests, even if the directions say otherwise, testwise students often go back to earlier sections.

Strategy 2: Give Them What They Ask For

A University of Chicago study showed that one thing most clearly separates testwise students from the rest: how accurately they read the directions and the questions. It's not that the testwise students are better readers; they just know what to look for. Here's how you too can understand what the directions and questions really ask for.

Tactic 1: Read critically

Read all directions and all questions as slowly and carefully as necessary. Don't jump to the conclusion that they're the same old instructions or questions you've seen in class or on earlier tests. Be especially alert for words that may slightly change what is being asked this time from what you have seen before. Watch for punctuation that can change the meaning of phrases in the instructions. Be sure you don't read "and" where the instructions say "or," or read "have to" where instructions say "may." Be careful not to read your own meanings into questions or instructions.

Tactic 2: Flag tricky directions

In some of the test instructions look tricky, circle or underline their key words. For example, if the directions say "blacken in the correct square" and you circle the words blacken in, you won't turn in a paper that is answered with check marks. On machine-scored tests, blacked-in spaces always register; with checks, you can never be sure that you will get credit for correct answers.

If your test includes an answer booklet or work paper, actually jot down important instructions such as "answer three essay questions out of five," "show all calculations," "two from Part A, one from Part B," and "copy the question." If the directions are complicated, number each step you have to take. Then remember to look back occasionally at the key phrases and steps. (On the other hand, don't keep rereading questions or directions needlessly; if your underlines or clue words are adequate, you can check yourself in just a few seconds.)

Tactic 3: Flag complicated questions

If questions are complicated, break them down into manageable parts. Number each part so you can check quickly to be sure that you have answered all the parts.

Tactic 4: Use all the help you can get

If directions say that you can use aids such as calculator, scrap paper, or even textbooks, don't play hero. Use them. You can be sure that testwise people are using them.

Tactic 5: Don't skip sample questions and answers

If sample questions and answers are given, as they often are in standardized tests, work them through. They will tell you whether the tester expects you to answer the questions with obvious answers or with thoughtful ones. They will also demonstrate how you're expected to mark your answers.

Strategy 3: Watch Out For Careless Errors

It's disheartening to work out a problem just right and get no credit for it because of some silly mistake you made in writing down the answer. Here's a quick checklist to use during every exam.

Tactic 1: Double-check when the pressure is off

Save time at the end of the exam to look for careless errors. Under tension, we all make slips. At the end of the test, when the pressure's off, we can usually find most of them.

- Reread questions to make sure that you read them accurately.
- Reread answers to make sure that you wrote what you meant to write.
- Be sure that all your numbers are legible.
- Double-check your calculations, using an alternate calculating method if possible.

Tactic 2: Fill in the right blanks

Make sure that you have put your name on the test-on all separate parts of the test. And be sure that you have placed all the answers in the proper spots. This is especially important to check when questions are on one sheet and answers on another.

Tactic 3: On essays, don't waste space

Don't skip lines, or cover only one side of a page (unless so directed), or use ornate handwriting on essays. First of all, you just might run out of space. Getting another test booklet takes up valuable time. Besides, test-graders might look on space-wasting as your way of trying to cover up for not knowing the material-and that can cost you points.

Strategy 4: Try To Reason Out Answers To Tough Questions

Testwise students know that there's a large gray area between knowing and not knowing an answer. They don't give up if they're stumped at first; they try to reason through the question systematically. Here's how you can do the same.

Tactic 1: Look for clues in the question

Don't ever assume that you can't answer a question simply because the contents seem unfamiliar at first. Try to substitute more concrete words or numbers for abstract ones. For example, if you encounter the term *production isoquant* on an exam and draw a blank, notice how *isoquant* divides into two possible stem words. *Quant* generally has something to do with *quantity* , doesn't it? Now, what about *iso* ? Isotherms on a weather map are lines connecting points of equal temperatures. *Iso* sceles triangles have two equal sides. So *isoquant* might mean equal quantities. See if this definition helps you answer the test question.

Tactic 2: Look for clues in the answer choices

When several answer choices are given, you can often reason out which answer is best. (In Chapter 5, on multiple-choice test strategies, we discuss this reasoning tactic in great detail.)

Tactic 3: Keep your eyes open for memory joggers

If one question stumps you, keep it filed away in the back of your mind as you go through the rest of the exam. Very often a question or answer that you haven't reached yet will trigger your memory on the earlier question. If you encounter enough related questions, maybe you can figure out in which chapter or lecture the stumper was given, and that can jog your memory.

Tactic 4: Save tough questions for last

Sometimes you don't need clever clues to figure out answers to questions that stumped you the first time through. Very often, it was tension that made your mind go blank; the relaxation that comes from getting through the entire test can frequently resurrect the right answer for you.

Tactic 5: If all else fails, guess

Except on exams that deduct a lot of points for incorrect answers, smart test-takers make educated guesses until they have filled in all the blanks. As a general rule:

- guessing always pays off when no points are deducted for it;

- guessing nearly always pays off in a course test for which you have studied, because when you have studied, you will rarely encounter a question about which you know absolutely nothing.

- guessing definitely pays off, even if points are subtracted for wrong answers, when you're given choices from which to select your answers.

How can you tell whether points are deducted for guesses? If the test directions tell you to answer all the questions, you can assume there will be no penalty for guessing. On standardized and other tests that give you a score sheet to work on, see if there is a space for the grader to list the number of wrong answers. If so, you should limit guessing to the questions for which the odds seem to be in your favor. (In later chapters we'll talk about how to make educated guesses on specific kinds of tests.)

Strategy 5: Get Special Clues From Standardized tests

Standardized tests are generally designed in standard ways. Testwise students learn how they are designed and use that information to get better scores. They all apply the following tactics.

Tactic 1: Remember that questions proceed from easy to difficult

Questions within particular sections usually progress in difficulty. So if you meet a difficult question at the beginning, you're probably reading too much into it or missing something obvious. On the other hand, if an easy question seems to be near the end, you're probably missing a subtlety or falling for a trick; reread the question more carefully.

Tactic 2: Fill in all the blanks

Standardized tests are usually time tests. (See Strategy 1 in chapter 1.) That means that very few people will finish all the questions. If you deliberately save a bit of time for the end of the test, you can go back and fill in all the blanks quickly. Since an unanswered answer is sure to be wrong, any answer can only help you get a better score.

Tactic 3: Remember the odds

Even on tests that subtract quarter-points for wrong answers, with educated guessing you may be able to play the odds and come out ahead. For example, many tests with four-part multiple-choice questions have two choices that are usually obviously wrong; even a flip of the coin on the remaining two choices results in the right answer two out of four times. And if you let your instincts and other clues help pick out the right choice among the two possibilities, the percentages climb way above three out of four.

Strategy 6: Get Special Clues From Instructor-Prepared Tests

Instructors who prepare tests generally have distinctive styles and particular patterns in mind. Here's how to find them and let them guide you to making educated guesses.

Tactic 1: Don't look too hard for hidden meanings in questions

Instructors tend to mix up easy and difficult questions, but they aim the questions at the level of understanding of average students. So don't read extra meaning into ordinary questions.

If two answers look correct, give the most obvious answer. (If there is room on the answer sheet, point out the question's ambiguity or indicate how the other answer might also be correct. If there is no room or no time to do this, take it up with the teacher before you get your graded test paper back.)

If no answer seems correct, choose the one that is most nearly correct. (Again, if you have time as well as room on the answer sheet, point out the discrepancy. If not, take it up with your teacher before the test grades are given back.)

Tactic 2: Look for clues within the questions

Instructor-prepared exams are usually full of valuable clues. Learn where to look for them.

Teachers try to use good grammar in the correct answers but often aren't as careful with the incorrect ones. If the question is in the past tense, but three of the four multiple-choice answers are in the present tense, the one in the past tense is likely to be the correct answer. (But if you've got a trickster for a teacher, watch out!)

Very often, the answer to one problem is contained in a later question. Keep your eyes open for this.